

Trp Channels As Therapeutic Targets From Basic Science To Clinical Use

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[Membrane Receptors, Channels and Transporters in Pulmonary Circulation](#) Jason X. -J. Yuan 2010-03-10 Membrane Receptors, Channels and Transporters in Pulmonary Circulation is a proceeding of the 2008 Grover Conference (Lost Valley Ranch and Conference Center, Sedalia, Colorado; September 3-7, 2008), which provided a forum for experts in the fields of those receptors, channels and transporters that have been identified as playing key roles in the physiology and pathophysiology of the pulmonary circulation. The book rigorously addresses: i) recent advances in our knowledge of receptors, channels and transporters and their role in regulation of pulmonary vascular function; ii) how modulation of expression and function of receptors, channels and transporters and their interrelationships contribute to the pathogenesis of pulmonary vascular disease; and iii) the therapeutic opportunities that may be revealed by enhancing our understanding of this area. The overall goal was to explore the mechanisms by which specific receptors, channels and transporters contribute to pulmonary vascular function in both health and disease, and how this knowledge may lead to novel interventions in lung dysplasia, pulmonary edema, lung injury, and pulmonary and systemic hypertension to reduce and prevent death from lung disease. Membrane Receptors, Channels and Transporters in Pulmonary Circulation is divided into six parts. Part 1 (Ion Channels in the Pulmonary Vasculature: Basics and New Findings) is designated for basic knowledge and recent findings in the research field of ion channels in pulmonary circulation. There are five chapters in Part I discussing the function, expression, distribution and regulation of various ion channels present in pulmonary vascular smooth muscle cells and how these channels are integrated to regulate intracellular Ca2+ and cell functions. Part II (TRP Channels in the Pulmonary Vasculature: Basics and New Findings) is composed of five chapters that are exclusively designed to discuss the role of a recently identified family of cation channels, transient receptor potential (TRP) channels, in the regulation of pulmonary vascular tone and arterial structure. Part III (Pathogenic Role of Ion Channels in Pulmonary Vascular Disease) includes four chapters that discuss how abnormal function and expression of various ion channels contribute to changes in cell functions and the development of pulmonary hypertension. Part IV (Receptors and Signaling Cascades in Pulmonary Arterial Hypertension) consists of five chapters devoted to the role of bone morphogenetic protein receptors, Notch receptors, serotonin receptors, Rho kinase and vascular endothelial growth factor receptors in the development of pulmonary arterial hypertension. Part V (Receptors and Transporters: Role in Cell Function and Hypoxic Pulmonary Vasoconstriction) includes four chapters designed to illustrate the potential mechanisms involved in oxygen sensing and hypoxia-induced pulmonary vasoconstriction and hypertension. Part VI (Targeting Ion Channels and Membrane Receptors in Developing Novel Therapeutic Approaches for Pulmonary Vascular Disease) consists five chapters which discuss the translational research involving on membrane receptors, channels and transporters, including their potential as novel drug targets. We hope that Membrane Receptors, Channels and Transporters in Pulmonary Circulation will allow readers to foster new concepts and new collaborations and cooperations among investigators so as to further understand the role of receptors, channels and transporters in lung pathophysiology. The ultimate goal is to identify new mechanisms of disease, as well as new therapeutic targets for pulmonary vascular diseases. An additional outcome should be enhanced understanding of the role of these entities in systemic vascular pathophysiology, since the conference will include researchers and clinicians with interests in both pulmonary and systemic circulations.

The Perplexing Physiology of the Nociceptive System Istvan Nagy 2022-01-11 Impacts that threaten or indeed compromise the integrity of tissues trigger the development of a defence response, which through the activity of the nociceptive system includes pain. If the noxious impact does not induce tissue damage, the pain, called “nociceptive” pain, ceases within seconds after the impact is withdrawn. In contrast, if tissue damage does occur, a pain experience that usually persists until the injury is resolved and includes two major pathological sensory experiences, hypersensitivity to heat stimuli (i.e. heat hyperalgesia) and/or hypersensitivity to mechanical stimuli (i.e. mechanical allodynia) develop. The cellular and molecular mechanisms underlying the development of nociceptive pain are fairly well understood. Our understanding of the development of pain associated with tissue injury has also significantly improved in the last decades. Hence, two fundamental mechanisms, interactions between the nervous and immune systems both within and without the central nervous system and sensitization that is a use-dependent increase in the sensitivity and activity of neurons involved in nociceptive processing have been identified being pivotal for the development of tissue injury-associated pain. However, important details of the cellular and molecular mechanisms, which account for the development of the pathological sensory experiences and those experiences becoming persistent, still await elucidation.

[Handbook of Cannabis](#) Roger G. Pertwee 2014 In addition it also examines the complex morphology, cultivation, harvesting, and processing of cannabis and the ways in which the plant's chemical composition can be controlled. As well as offering a raft of scientific information there is extensive coverage of cannabinoid-based medicines. Helping readers to identify and evaluate their benefits, chapters explore pharmacological actions and the effects that seem to underlie approved therapeutic uses, how they are currently used to treat certain disorders, and the ever-growing number of wide-ranging potential clinical applications. There is also coverage of both the legal and illegal sources of cannabis, including 'coffee shops' and 'cannabis dispensaries'. The complex issue of 'recreational cannabis' is also tackled. **Vanilloid Receptor TRPV1 in Drug Discovery** Arthur Gomtsyan 2010-02-12 Examines the emerging therapeutic role of TRPV1 TRPV1 is considered an integrator of noxious stimuli and therefore may be at a crossroads for pain transmission pathways. Because of its potential for managing multiple pain types, including osteoarthritis, chronic low back pain, neuropathic pain, and cancer pain, some consider it "the holy grail" of pain management. This dedicated reference summarizes available data related to the potential therapeutic utility for TRPV1 ligands. With contributions from many of the world's leading experts on TRP channels, Vanilloid Receptor TRPV1 in Drug Discovery covers the important TRPV1 target for drugs to treat painful conditions such as inflammation, arthritis, and cancer pain. The book discusses: Recent advances in biology, chemistry, and pharmacology at both the preclinical and clinical stage of the dynamic area of TRPV1 drug discovery research The potential for drugs targeting TRPV1 in painful conditions such as inflammation, arthritis, and cancer The development of analgesic drugs Other applications for TRPV1, including the treatment of respiratory disease and diabetes Featuring data relevant to the therapeutic potential of TRPV1 and the medicinal chemistry involved in designing TRPV1 antagonists, Vanilloid Receptor TRPV1 in Drug Discovery is a key tool for researchers in the pharmaceutical industry and academia involved in pain, ion channels, and analgesic drug development.

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transporters that have been identified as playing key roles in the physiology and pathophysiology of the pulmonary circulation. The book rigorously addresses: i) recent advances in our knowledge of receptors, channels and transporters and their role in regulation of pulmonary vascular function; ii) how modulation of expression and function of receptors, channels and transporters and their interrelationships contribute to the pathogenesis of pulmonary vascular disease; and iii) the therapeutic opportunities that may be revealed by enhancing our understanding of this area. The overall goal was to explore the mechanisms by which specific receptors, channels and transporters contribute to pulmonary vascular function in both health and disease, and how this knowledge may lead to novel interventions in lung dysplasia, pulmonary edema, lung injury, and pulmonary and systemic hypertension to reduce and prevent death from lung disease. Membrane Receptors, Channels and Transporters in Pulmonary Circulation is divided into six parts. Part 1 (Ion Channels in the Pulmonary Vasculature: Basics and New Findings) is designated for basic knowledge and recent findings in the research field of ion channels in pulmonary circulation. There are five chapters in Part I discussing the function, expression, distribution and regulation of various ion channels present in pulmonary vascular smooth muscle cells and how these channels are integrated to regulate intracellular Ca2+ and cell functions. Part II (TRP Channels in the Pulmonary Vasculature: Basics and New Findings) is composed of five chapters that are exclusively designed to discuss the role of a recently identified family of cation channels, transient receptor potential (TRP) channels, in the regulation of pulmonary vascular tone and arterial structure. Part III (Pathogenic Role of Ion Channels in Pulmonary Vascular Disease) includes four chapters that discuss how abnormal function and expression of various ion channels contribute to changes in cell functions and the development of pulmonary hypertension. Part IV (Receptors and Signaling Cascades in Pulmonary Arterial Hypertension) consists of five chapters devoted to the role of bone morphogenetic protein receptors, Notch receptors, serotonin receptors, Rho kinase and vascular endothelial growth factor receptors in the development of pulmonary arterial hypertension. Part V (Receptors and Transporters: Role in Cell Function and Hypoxic Pulmonary Vasoconstriction) includes four chapters designed to illustrate the potential mechanisms involved in oxygen sensing and hypoxia-induced pulmonary vasoconstriction and hypertension. Part VI (Targeting Ion Channels and Membrane Receptors in Developing Novel Therapeutic Approaches for Pulmonary Vascular Disease) consists five chapters which discuss the translational research involving on membrane receptors, channels and transporters, including their potential as novel drug targets. We hope that Membrane Receptors, Channels and Transporters in Pulmonary Circulation will allow readers to foster new concepts and new collaborations and cooperations among investigators so as to further understand the role of receptors, channels and transporters in lung pathophysiology. The ultimate goal is to identify new mechanisms of disease, as well as new therapeutic targets for pulmonary vascular diseases. An additional outcome should be enhanced understanding of the role of these entities in systemic vascular pathophysiology, since the conference will include researchers and clinicians with interests in both pulmonary and systemic circulations.

[Ion Channels as Therapeutic Targets, Part A](#) 2016-02-23 Ion Channels as Therapeutic Targets is the latest volume in the popular Advances in Protein Chemistry and Structural Biology series, an essential resource for protein chemists. Each volume brings forth new information about protocols and analysis of proteins, with each thematically organized volume guest edited by leading experts in a broad range of protein-related topics. Provides cutting-edge developments in protein chemistry and structural biology Discusses the use of ion channels as therapeutic targets Chapters are written by authorities in their field Targeted to a wide audience of researchers, specialists, and students **Transient Receptor Potential (TRP) Channels in Drug Discovery: Old Concepts & New Thoughts** Arpad Szallasi 2018-06-22 This book is a printed edition of the Special Issue "Transient Receptor Potential (TRP) Channels in Drug Discovery: Old Concepts & New Thoughts" that was published in Pharmaceuticals

TRP Channels in Health and Disease Alexander Dietrich 2019 Almost 25 years ago, the first mammalian transient receptor potential (TRP) channel was cloned and published. TRP channels now represent an extended family of 28 members fulfilling multiple roles in the living organism. Identified functions include control of body temperature, transmitter release, mineral homeostasis, chemical sensing, and survival mechanisms in a challenging environment. The TRP channel superfamily covers six families: TRPC with C for “canonical”, TRPA with A for “ankyrin”, TRPM with M for “melastatin”, TRPML with ML for “mucolipidin”, TRPP with P for “polycystin”, and TRPV with V for “vanilloid”. Over the last few years, new findings on TRP channels have confirmed their exceptional function as cellular sensors and effectors. This Special Book features a collection of 8 reviews and 7 original articles published in “Cells” summarizing the current state-of-the-art on TRP channel research, with a main focus on TRP channel activation, their physiological and pathophysiological function, and their roles as pharmacological targets for future therapeutic options.

Reviews of Physiology, Biochemistry and Pharmacology Vol. 169 Bernd Nilius 2015-11-25 Leading researchers are specially invited to provide a complete understanding of the key topics in these archetypal multidisciplinary fields. In a form immediately useful to scientists, this periodical aims to filter, highlight and review the latest developments in these rapidly advancing fields.

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Mammalian TRP Channels as Molecular Targets Derek J. Chadwick 2004-04-16 This book brings together contributions from key investigators in the area of Transient Receptor Potential (TRP) channel structure and function. It covers the structure, function and regulation of mammalian TRP channels and mechanisms of signal transduction. The discussions indicate research that would improve understanding of the role of TRP channels in normal cellular physiology, the involvement of TRP channels in disease states and their potential use as molecular targets for novel therapeutic agents.

Transient Receptor Potential (TRP) Channels in Drug Discovery: Old Concepts & New Thoughts Susan M. Huang (Ed.)

Transient Receptor Potential (TRP) Channels Veit Flockerzi 2007-02-07 This volume provides up-to-date information on the molecular and functional properties and pharmacology of mammalian TRP channels. Leading experts in the field have written 35 essays which describe properties of a single TRP protein/channel or portray more general principles of TRP function and important pathological situations linked to mutations of TRP genes or their altered expression.

Membrane Receptors, Channels and Transporters in Pulmonary Circulation Jason X. -J. Yuan 2011-05-27 Membrane Receptors, Channels and Transporters in Pulmonary Circulation is a proceeding of the 2008 Grover Conference (Lost Valley Ranch and Conference Center, Sedalia, Colorado; September 3-7, 2008), which provided a forum for experts in the fields of those receptors, channels and transporters that have been identified as playing key roles in the physiology and pathophysiology of the pulmonary circulation. The book rigorously addresses: i) recent advances in our knowledge of receptors, channels and transporters and their role in regulation of pulmonary vascular function; ii) how modulation of expression and function of receptors, channels and transporters and their interrelationships contribute to the pathogenesis of pulmonary vascular disease; and iii) the therapeutic opportunities that may be revealed by enhancing our understanding of this area. The overall goal was to explore the mechanisms by which specific receptors, channels and transporters contribute to pulmonary vascular function in both health and disease, and how this knowledge may lead to novel interventions in lung dysplasia, pulmonary edema, lung injury, and pulmonary and systemic hypertension to reduce and prevent death from lung disease. Membrane Receptors, Channels and Transporters in Pulmonary Circulation is divided into six parts. Part 1 (Ion Channels in the Pulmonary Vasculature: Basics and New Findings) is designated for basic knowledge and recent findings in the research field of ion channels in pulmonary circulation. There are five chapters in Part I discussing the function, expression, distribution and regulation of various ion channels present in pulmonary vascular smooth muscle cells and how these channels are integrated to regulate intracellular Ca²⁺ and cell functions. Part II (TRP Channels in the Pulmonary Vasculature: Basics and New Findings) is composed of five chapters that are exclusively designed to discuss the role of a recently identified family of cation channels, transient receptor potential (TRP) channels, in the regulation of pulmonary vascular tone and arterial structure. Part III (Pathogenic Role of Ion Channels in Pulmonary Vascular Disease) includes four chapters that discuss how abnormal function and expression of various ion channels contribute to changes in cell functions and the development of pulmonary hypertension. Part IV (Receptors and Signaling Cascades in Pulmonary Arterial Hypertension) consists of five chapters devoted to the role of bone morphogenetic protein receptors, Notch receptors, serotonin receptors, Rho kinase and vascular endothelial growth factor receptors in the development of pulmonary arterial hypertension. Part V (Receptors and Transporters: Role in Cell Function and Hypoxic Pulmonary Vasoconstriction) includes four chapters designed to illustrate the potential mechanisms involved in oxygen sensing and hypoxia-induced pulmonary vasoconstriction and hypertension. Part VI (Targeting Ion Channels and Membrane Receptors in Developing Novel Therapeutic Approaches for Pulmonary Vascular Disease) consists five chapters which discuss the translational research involving on membrane receptors, channels and transporters, including their potential as novel drug targets. We hope that Membrane Receptors, Channels and Transporters in Pulmonary Circulation will allow readers to foster new concepts and new collaborations and cooperations among investigators so as to further understand the role of receptors, channels and transporters in lung pathophysiology. The ultimate goal is to identify new mechanisms of disease, as well as new therapeutic targets for pulmonary vascular diseases. An additional outcome should be enhanced understanding of the role of these entities in systemic vascular pathophysiology, since the conference will include researchers and clinicians with interests in both pulmonary and systemic circulations.

TRP Channels in Health and Disease Alexander Dietrich 2019-06-25 Almost 25 years ago, the first mammalian transient receptor potential (TRP) channel was cloned and published. TRP channels now represent an extended family of 28 members fulfilling multiple roles in the living organism. Identified functions include control of body temperature, transmitter release, mineral homeostasis, chemical sensing, and survival mechanisms in a challenging environment. The TRP channel superfamily covers six families: TRPC with C for “canonical”, TRPA with A for “ankyrin”, TRPM with M for “melastatin”, TRPML with ML for “mucolipidin”, TRPP with P for “polycystin”, and TRPV with V for “vanilloid”. Over the last few years, new findings on TRP channels have confirmed their exceptional function as cellular sensors and effectors. This Special Book features a collection of 8 reviews and 7 original articles published in “Cells” summarizing the current state-of-the-art on TRP channel research, with a main focus on TRP channel activation, their physiological and pathophysiological function, and their roles as pharmacological targets for future therapeutic options.

Phytocannabinoids A. Douglas Kinghorn 2017-01-24 The book presents the current state of the art on phytocannabinoid chemistry and pharmacology and will be of much use to those wishing to understand the current landscape of the exciting and intriguing phytocannabinoid science. The focus is on natural product cannabinoids which have been demonstrated to act at specific receptor targets in the CNS.

TRP Channels in Inflammation and Immunity Santiago Partida Sanchez 2021-06-08

Progress in Medicinal Chemistry 2017-03-15 Progress in Medicinal Chemistry, Volume 56 provides a review of eclectic developments in medicinal chemistry. This volume includes chapters covering recent advances in cancer therapeutics, fluorine in medicinal chemistry, a perspective on the next generation of antibacterial agents derived by manipulation of natural products, a potential new era for Chagas Disease drug discovery, and imaging in drug development. Specific chapters cover timely topics, such as the development of LRRK2 inhibitors for the treatment of Parkinson's, and recent discoveries and developments in TRPA1 modulators. Users will find a comprehensive resource on the topic of medicinal chemistry that also discusses avenues for the acceleration of drug discovery programs. Extended, timely reviews of topics in medicinal chemistry Contains targets and technologies relevant to the discovery of tomorrow's drugs Presents analyses of successful drug discovery programs

Emerging Roles of TRP Channels in Brain Pathology Bilal ÇİĞ 2021-08-02

Mammalian Transient Receptor Potential (TRP) Cation Channels Bernd Nilius 2014-06-24 In this fast moving field the main goal of this volume is to provide up-to-date information on the molecular and functional properties and pharmacology of mammalian TRP channels. Leading experts in the field describe properties of a single TRP protein/channel or portray more general principles of TRP function and important pathological situations linked to mutations of TRP genes or their altered expression. Thereby this volume on Transient Receptor Potential (TRP) Channels provides valuable information for readers with different expectations and backgrounds, for those who are approaching this field of research as well as for those wanting to make a trip to TRPs.

TRP Ion Channel Function in Sensory Transduction and Cellular Signaling Cascades Wolfgang B. Liedtke, MD, PH.D. 2006-09-29 Since the first TRP ion channel was discovered in *Drosophila melanogaster* in 1989, the progress made in this area of signaling research has yielded findings that offer the potential to dramatically impact human health and wellness. Involved in gateway activity for all five of our senses, TRP channels have been shown to respond to a wide range of stimuli from both within and outside the cell body. How we sense heat and cold, how we taste food, how eggs are fertilized, how the heart expands and contracts is each dependent on the function of these channels. While no single book could possibly cover all the research being undertaken, TRP Ion Channel Function in Sensory Transduction and Cellular Signaling Cascades presents the most advanced compilation of work in this area to date. All 31 chapters are written by international pioneers working at the vanguard of TRP ion channel research. They explain much about the pivotal function and behavior of these channels, which are most exquisitely tuned to their specific tasks, and delve into how researchers are putting this knowledge to use in the development of novel pharmaceuticals, which may well prove effective in ameliorating treatment-resistant conditions including cancer, heart disease, inflammation, and immune system dysfunctions. Individual chapters shed light on selected topics of interest in the TRP arena, such as signal transduction in axonal path-finding, and in vascular, renal, and auditory functions, as well as pain. The text also covers subjects as diverse as mating and fertilization, inflammatory pain, and mechanisms of pheromone detection in mammals. While the book presents much new insight and explores findings that will be of interest to those involved with advanced research, it also includes significant background material for those looking to familiarize themselves with this exceptionally promising path of inquiry.

Ion Channels Down Under 2017-05-18 Ion Channels Down Under, Volume 79 provides up-to-date information on ion channel pharmacology, their pharmacological modulators, and role in a diverse range of poorly treated medical conditions. Contributors include prominent scientists and highly-recognized experts with major accomplishments in the field of ion channel pharmacology. Topics covered include the role of ion channels in health and disease, ion channels as therapeutic targets and the molecular pharmacology of ion channels. Provides a must read book on ion channel pharmacology Contains up-to-date information on a number of ion channels, their pharmacological modulators, and their role in a diverse range of poorly treated medical conditions Contains contributions from prominent scientists and highly-recognized experts with major accomplishments in the field

Membrane Transporters and Channels as Targets for Drugs Graça Soveral 2020-01-03 Transporters and channels are membrane proteins that mediate the traffic of metabolites, water and ions across biological membranes. Membrane transport proteins are crucial to maintain homeostasis and assure cell survival upon intracellular or environmental stress. A failure of any of these transport systems may have dramatic consequences for cell function. There is increasing evidence that membrane transport proteins play important functions in healthy conditions and that their absence or dysfunction may cause diseases. In recent years much attention has been paid to diseases resulting from defective transporters (“carrier diseases”) and ion channels (“channelopathies”). Very interestingly, altered expression of transporters has been described in several human pathologies. On this basis, many transport proteins are well acknowledged targets for drugs. Many others are involved in drug delivery and disposition and/or are considered potential targets. Others are off-targets for drugs and then, are responsible for side effects. Thus, membrane protein drug discovery is now an emerging field where the search for physiological mechanisms of regulation and for chemical compounds as modulators of transport activity, present new opportunities for drug development and for new therapies. This Research Topic addresses the latest research advances in membrane transport proteins, stimulating future research on these important protein families.

Ion Channel Signalling in Cancer: From Molecular Mechanisms to Therapeutics Elena Adinolfi 2021-08-02

Ion Channels as Therapeutic Targets 2016-03-31 This volume is the second part of the thematic on Ion Channels as Therapeutic Targets. The popular Advances in Protein Chemistry and Structural Biology series, an essential resource for protein chemists, brings forth new information about protocols and analysis of proteins, with each thematically organized volume guest edited by leading experts in a broad range of protein-related topics. Provides cutting-edge developments in protein chemistry and structural biology Discusses the use of ion channels as therapeutic targets Chapters are written by authorities in their field Targeted to a wide audience of researchers, specialists, and students

Chemesthesis Shane T. McDonald 2016-01-15 Chemesthesis are the chemically initiated sensations that occur via the touch system. Examples in the mouth include the burn of capsaicinoids in chilies, the cooling of menthol in peppermint, and the tingle of carbonation. It is physiologically distinct from taste and smell, but is increasingly understood to be just as important as these senses for their contribution to flavor, especially with the sustained growth in interest in spicy foods from around the world. Chemesthesis: Chemical Touch in Food and Eating surveys the modern body of work on chemesthesis, with a variety of contributors who are well known for their expertise on the topic. After a forward by John Prescott and an introduction by Barry Green (who originally coined the term chemesthesis 25 years ago), the book moves on to survey chemesthetic spices and address the psychology and physiology of chemesthesis; practical sensory and instrumental analysis; the interaction of chemesthesis with other chemical senses; health ramifications; and the application of chemesthesis in food. The major types of chemesthesis, including pungency/burning, cooling, tingling, nasal irritation, and numbing, are each covered in their own chapter. The book concludes with a look to the future. This is the first comprehensive book on chemesthesis since 1990, when Barry Green and his colleagues edited a volume on the perception of chemical irritants, including those in food. This new book is intended to be a vital resource for anyone interested in the sensory impact of the food we eat, including food scientists, sensory professionals, analytical chemists, physiologists, culinary scientists, and others.

Frontiers in CNS Drug Discovery Atta-ur-Rahman 2013-09-10 “Frontiers in CNS Drug Discovery” is an eBook series devoted to publishing the latest and the most important advances in Central Nervous System (CNS) drug design and discovery. Eminent scientists write contributions on all areas of rational drug design and drug discovery including medicinal chemistry, in-silico drug design, combinatorial chemistry, high-throughput screening, drug targets, recent important patents, and structure-activity relationships. The eBook series should prove to be of interest to all pharmaceutical scientists involved in research in CNS drug design and discovery. Each volume is devoted to the major advances in CNS drug design and discovery. The eBook series is essential reading to all scientists involved in drug design and discovery who wish to keep abreast of rapid and important developments in the field.

Pharmacology and Therapeutics of Asthma and COPD Clive P. Page 2017-02-06 The present volume is supposed to be a major reference resource for chest physicians and those involved in the development of novel pharmaceutical entities for these diseases. Internationally recognized authorities review the most important new information on the advances in our understanding of the pathogenesis and treatment of these diseases, including the substantial advances in the topical delivery of inhaled medicines. Each chapter is extensively referenced, generously illustrated with clear diagrams and photographs, and represents a state-of-the-art review of this important area of respiratory medicine.

Medical Physiology E-Book Walter F. Boron 2016-03-29 For a comprehensive understanding of human physiology — from molecules to systems —turn to the latest edition of Medical Physiology. This updated textbook is known for its unparalleled depth of information,

equipping students with a solid foundation for a future in medicine and healthcare, and providing clinical and research professionals with a reliable go-to reference. Complex concepts are presented in a clear, concise, and logically organized format to further facilitate understanding and retention. Clear, didactic illustrations visually present processes in a clear, concise manner that is easy to understand. Intuitive organization and consistent writing style facilitates navigation and comprehension. Takes a strong molecular and cellular approach that relates these concepts to human physiology and disease. An increased number of clinical correlations provides a better understanding of the practical applications of physiology in medicine. Highlights new breakthroughs in molecular and cellular processes, such as the role of epigenetics, necroptosis, and ion channels in physiologic processes, to give insights into human development, growth, and disease. Several new authors offer fresh perspectives in many key sections of the text, and meticulous editing makes this multi-authored resource read with one unified voice. Includes electronic access to 10 animations and copious companion notes prepared by the Editors.

Ion Channel Drug Discovery Brian Cox 2014-09-03 Ion channel drug discovery is a rapidly evolving field fuelled by recent, but significant, advances in our understanding of ion channel function combined with enabling technologies such as automated electrophysiology. The resurgent interest in this target class by both pharmaceutical and academic scientists was clearly highlighted by the over-subscribed RSC/BPS 'Ion Channels as Therapeutic Targets' symposium in February 2009. This book builds on the platform created by that meeting, covering themes including advances in screening technology, ion channel structure and modelling and up-to-date case histories of the discovery of modulators of a range of channels, both voltage-gated and non-voltage-gated channels. The editors have built an extensive network of contacts in the field through their first-hand scientific experience, collaborations and conference participation and the organisation of the meeting at Novartis, Horsham, increased the network enabling the editors to draw on the experience of eminent researchers in the field. Interest and investment in ion channel modulation in both industrial and academic settings continues to grow as new therapeutic opportunities are identified and realised for ion channel modulation. This book provides a reference text by covering a combination of recent advances in the field, from technological and medicinal chemistry perspectives, as well as providing an introduction to the new 'ion channel drug discoverer'. The book has contributions from highly respected academic researchers, industrial researchers at the cutting edge of drug discovery and experts in enabling technology. This combination provides a complete picture of the field of interest to a wide range of readers.

Frontiers in Clinical Drug Research - Hematology: Volume 4 Atta-ur-Rahman 2020-11-30 Frontiers in Clinical Drug Research - Hematology is a book series that brings updated reviews to readers interested in learning about advances in the development of pharmaceutical agents for the treatment of hematological disorders. The scope of the book series covers a range of topics including the medicinal chemistry, pharmacology, molecular biology and biochemistry of natural and synthetic drugs employed in the treatment of anemias, coagulopathies, vascular diseases and hematological malignancies. Reviews in this series also include research on specific antibody targets, therapeutic methods, genetic hemoglobinopathies and pre-clinical / clinical findings on novel pharmaceutical agents. Frontiers in Clinical Drug Research - Hematology is a valuable resource for pharmaceutical scientists and postgraduate students seeking updated and critically important information for developing clinical trials and devising research plans in the field of hematology, oncology and vascular pharmacology. The fourth volume of this series features 5 reviews: -TRP Channels: Potential Therapeutic Targets in Blood Disorders -Hypercoagulable States: Clinical Symptoms, Laboratory Markers and Management -Advanced Applications of Gene Therapy in the Treatment of Hematologic Disorders -Ferroptosis - Importance and Potential Effects in Hematological Malignancies -Clinical Application of Liquid Biopsy in Solid Tumor HCC: Prognostic, Diagnostic and Therapy Monitoring Tool.

Predictive, Prognostic Biomarkers and Therapeutic Targets in Breast Cancer Zhi-Ming Shao 2022-09-28

Involvements of TRP Channels, Oxidative Stress and Apoptosis in Neurodegenerative Diseases Mustafa Naziroglu 2021-05-03 *Neuroprotective Therapy for Stroke and Ischemic Disease* Paul A. Lapchak 2017-01-12 A critical and comprehensive look at current state-of-the-art scientific and translational research being conducted internationally, in academia and industry, to address new ways to provide effective treatment to victims of ischemic and hemorrhagic stroke and other ischemic diseases. Currently stroke can be successfully treated through the administration of a thrombolytic, but the therapeutic window is short and many patients are not able to receive treatment. Only about 30% of patients are "cured" by available treatments. In 5 sections, the proposed volume will explore historical and novel neuroprotection mechanisms and targets, new and combination therapies, as well as clinical trial design for some of the recent bench-side research.

TRP Channels Michael X. Zhu 2016-04-19 The rapid expansion of the TRP field has generated a large amount of excellent original work across many different research fields. However, investigators are not necessarily familiar with the pros and cons of the variety of methods used to study TRP channels. Because of functional and genetic diversity, as well as the different physiological roles

Neurobiology of TRP Channels Tamara Luti Rosenbaum Emir 2017-08-09 During the last two decades, there has been an explosion of research pertaining to the molecular mechanisms that allow for organisms to detect different stimuli that is an essential feature for their survival. Among these mechanisms, living beings need to be able to respond to different temperatures as well as chemical and physical stimuli. Thermally activated ion channels were proposed to be present in sensory neurons in the 1980s, but it was not until 1997 that a heat- and capsaicin- activated ion channel, TRPV1, was cloned and its function described in detail. This groundbreaking discovery led to the identification and characterization of several more proteins of the family of Transient Receptor Potential (TRP) ion channels. Intensive research has provided us with the atomic structures of some of these proteins, as well as understanding of their physiological roles, both in normal and pathological conditions. With chapters contributed by renowned experts in the field, Neurobiology of TRP Channels contains a state- of- the- art overview of our knowledge of TRP channels, ranging from structure to their functions in organismal physiology. Features: • Contains chapters on the roles of several TRP ion channels with a diversity of physiological functions, providing a complete picture of the widespread importance of these proteins. • Presents an overview of the structure of TRP channels, including the roles of these proteins in different physiological processes. • Discusses the roles of TRP channels in pathophysiological processes, further highlighting their importance. • Features several full color illustrations to allow the reader better comprehension of TRP channels. A volume in the Frontiers in Neuroscience series

Innovative Medicine Kazuwa Nakao 2015-10-13 This book is devoted to innovative medicine, comprising the proceedings of the Uehara Memorial Foundation Symposium 2014. It remains extremely rare for the findings of basic research to be developed into clinical applications, and it takes a long time for the process to be achieved. The task of advancing the development of basic research into clinical reality lies with translational science, yet the field seems to struggle to find a way to move forward. To create innovative medical technology, many steps need to be taken: development and analysis of optimal animal models of human diseases, elucidation of genomic and epidemiological data, and establishment of "proof of concept". There is also considerable demand for progress in drug research, new surgical procedures, and new clinical devices and equipment. While the original research target may be rare diseases, it is also important to apply those findings more broadly to common diseases. The book covers a wide range of topics and is organized into three complementary parts. The first part is basic research for innovative medicine, the second is translational research for innovative medicine, and the third is new technology for innovative medicine. This book helps to understand innovative medicine and to make progress in its realization.

TRP Channels as Therapeutic Targets Arpad Szallasi 2015-04-09 TRP Channels as Therapeutic Targets: From Basic Science to Clinical Use is authored by experts across academia and industry, providing readers with a complete picture of the therapeutic potential and challenges associated with using TRP channels as drug targets. This book offers a unique clinical approach by covering compounds that target TRP channels in pre-clinical and clinical phases, also offering a discussion of TRP channels as biomarkers. An entire section is devoted to the novel and innovative uses of these channels across a variety of diseases, offering strategies that can be used to overcome the adverse effects of first generation TRPV1 antagonists. Intended for all researchers and clinicians working toward the development of successful drugs targeting TRP channels, this book is an essential resource chocked full of the latest clinical data and findings. Contains comprehensive coverage of TRP channels as therapeutic targets, from emerging clinical indications to completed clinical trials Discusses TRP channels as validated targets, ranging from obesity and diabetes through cancer and respiratory disorders, kidney diseases, hypertension, neurodegenerative disorders, and more Provides critical analysis of the complications and side effects that have surfaced during clinical trials, offering evidence-based suggestions for overcoming them

Voltage-Gated Ion Channels as Drug Targets David J. Triggler 2006-08-21 Edited by the most prominent person in the field and top researchers at US pharmaceutical companies, this is a unique resource for drug developers and physiologists seeking a molecular-level understanding of ion channel pharmacology. After an introduction to the topic, the authors evaluate the structure and function of ion channels, as well as related drug interaction. A section on assay technologies is followed by a section each on calcium, sodium and potassium channels. Further chapters cover genetic and acquired channelopathies, before the book closes with a look at safety issues in ion channel drug development. For medicinal and pharmaceutical chemists, biochemists, molecular biologists and those working in the pharmaceutical industry.

Mammalian TRP Channels as Molecular Targets Derek J. Chadwick 2004-08-11 This book brings together contributions from key investigators in the area of Transient Receptor Potential (TRP) channel structure and function. It covers the structure, function and regulation of mammalian TRP channels and mechanisms of signal transduction. The discussions indicate research that would improve understanding of the role of TRP channels in normal cellular physiology, the involvement of TRP channels in disease states and their potential use as molecular targets for novel therapeutic agents.