The Nmda Receptor

Biology of the NMDA Receptor *Biology of the Nmda Receptor* **Animal Models of Cognitive Impairment** **The NMDA Receptor** **Biology of the NMDA Receptor** *The NMDA Receptors* **NMDA Antagonists as Potential Analgesic Drugs** Astrocyte **The NMDA Receptor** **Brain On Fire: My Month of Madness Toward a Molecular Basis of Alcohol Use and Abuse** Nmda Antagonists As Potential Analgesic Drugs *Rapid Acting Antidepressants* *The Essence of Analgesia and Analgesics* **Autoimmune Neurology** **Mechanisms of Memory** NMDA Receptor Protocols **Glutamate and GABA Receptors and Transporters** **Pain Medicine** **Magnesium in the Central Nervous System** **Neuronal Dynamics** **Focus on Extrapyramidal Dysfunction** The Glutamate Receptors GABA And Glutamate **Deer's Treatment of Pain** **The Ionotropic Glutamate Receptors** *Ageing and Dementia* Glutamate-Related Biomarkers in Drug Development for Disorders of the Nervous System *Ketamine Culturing Nerve Cells* **The Signaling Mechanism of Endothelial NMDA Receptors in Cerebral Vasodilation** *Attention Deficit Hyperactivity Disorder in Children and Adolescents* **Novel Antipsychotic Drugs** *Brain Injury and Pediatric Cardiac Surgery* NMDA Antagonists as Potential Analgesic Drugs Evidence-based Clinical Practice Guideline for Deprescribing Cholinesterase Inhibitors and Memantine **Post-Transcriptional Control of NMDA Receptor Expression** **NMDA Receptors** The NMDA Receptors Biogenic Amines in Neurotransmission and Human Disease

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Culturing Nerve Cells Apr 30 2020 In many ways a do-it-yourself manual for culturing nerve cells, complete with recipes and protocols, but also providing an understanding of the principles behind the protocols. The contributors to this volume invite you to their labs and provide information

Astrocyte Mar 22 2022 A team of authors from prestigious academic schools contributed to draw up a project that would give a detailed account of astrocyte's morphology and physiology, examining thoroughly all the astrocyte's types; giving an accurate description of their morphology, location, function in the brain; and illustrating their physiology and pathology in terms of dealing with neurons through "gliotransmitters," ionic channels, and membrane receptors expression. This book gives an overview of the crucial role of astrocytes in the physiology of the CNS and in the pathogenesis of several CNS disorders suggesting that the shift from a neurocentric view to one that incorporates astrocytes in disease models for drug discovery is a critical step in renewing drug development strategies to treat neurodegenerative diseases.

Biogenic Amines in Neurotransmission and Human Disease Jun 20 2019 Drawing on the expertise of experienced researchers in neurotransmission and catecholamines, this book provides a brief overview of the latest knowledge in the field. The book contains an introductory chapter that aims to explain the subsequent four chapters for researchers who are new to the field.

The Signaling Mechanism of Endothelial NMDA Receptors in Cerebral Vasodilation Mar 30 2020 The NMDA receptors have been discovered to be crucial regulators in vasodilatory signaling pathway. Activation of NMDA receptors expressed by neurons causes calcium entry, which contributes to the increase in nNOS activity and NO synthesis. Previous research done by our group has shown that there is a functional linkage between brain endothelial NMDA receptors and nitric oxide production. However, whether eNMDA receptors influence Ca2+ levels and whether there is mechanistic linkage between Ca2+ entry and eNOS activity/NO production in brain endothelial cell is still not well understood. Here, I found while glutamate has no effect on Ca2+ levels in adult mouse primary endothelial cells, NMDA receptor agonist, D-serine, significantly enhanced intracellular Ca2+ levels at physiological dose. These effects were mitigated by NMDAR channel blocker, MK-801, and NMDAR-associated D-serine/Glycine binding cite antagonist, DCKA. On the basis of our published data that eNMDARs trigger nitric oxide generation in primary brain endothelial cultures from neonatal (14-21 days old) mouse model, I developed an adult brain endothelial cell culture system and found that there was a smaller contribution of endothelial NMDA receptors to nitric oxide effects in these older cells. D-serine alone did not result in nitric oxide generation as high as 1000 □M. A heavy disconnect between Ca2+ response and NO generation mediated by eNMDARs suggest a novel eNMDAR-related vasodilatory signaling pathway may exist in endothelial cells that is independent of the eNOS/NO effects.

NMDA Receptor Protocols Jun 13 2021 Min Li and a panel of hands-on experimentalists detail state-of-the-art molecular techniques for studying NMDA ligand-gated ion channels and developing assays for nontherapeutic lead selection. The topics range from cDNA cloning to in vitro and in vivo investigation of the channel complex in the mammalian brain. Additional topics include the biochemical analysis of the channel protein and the construction of various heterologous systems for both basic research and high throughput screens (HTS) for pharmaceutical chemicals. Although the focus is on NMDA receptors, the methods are applicable to other ligand-gated ion channels and with some modification may be extended to related membrane signaling receptors. NMDA Receptor Protocols offers today's scientists powerful methods for basic research on NMDA receptor structure and function, as well as enormous opportunities for clinical investigation toward the development of novel bioactive compounds.

Novel Antipsychotic Drugs Jan 28 2020 Contains highlights of an American College of Neuropsychopharmacology conference on new directions in the development of atypical and other novel antipsychotic drugs. Presents new theories and preclinical and clinical data on various drugs and classes of drugs including amperozide and other drugs.

Pain Medicine Apr 11 2021 This book serves as a practical resource for pain medicine providers. It presents important clinical concepts while covering critical pain medicine fundamentals. Chapters were carefully chosen to cover common aspects of clinical pain medicine and also follow a common format to facilitate quick look-up. Each chapter includes a concise discussion of the latest supporting evidence as well as relevant case scenarios. The coverage is clinically and board relevant, evidence-based and up-to-date. It will appeal to residents preparing for the written board examination and practitioners preparing for board re-certification, which now occurs every 10 years. Beyond these groups, the book has the potential to appeal to learners and practitioners around the world; pain medicine is burgeoning globally, and there is great need for concise, clinically relevant resources.

Deer's Treatment of Pain Oct 05 2020 Designed and written by a team of clinically established academics, this is a unique book that is an excellent manual for physicians practicing pain medicine or treating pain in neurosurgery, orthopedic, neurology, or family practice clinics. As a practical resource, this book is written to be more accessible to the reader and is designed to be more clinically-focused and useful

in day-to-day practice. This 102 chapter volume is divided into seven separate sections: Anatomy and Physiology of Pain, Psychology of Pain, Pharmacological Treatment of Pain, Interventional Treatment of Pain, Adjuvant Therapies for Pain and Suggested Reading. The calculated organization of this book is supplemented by key photos, drawings and a self-assessment of four key questions at the end of each chapter -- thus making it an indispensable, pragmatic resource that will benefit anyone working in the pain management field. Deer's Treatment of Pain: An Illustrated Guide for Practitioners contains pearls for improving knowledge and improving one’s practice as a physician.

NMDA Receptors Aug 23 2019 This volume explores the latest techniques used by researchers to help them better understand the NMDAR structure-function relations, principles, and rules that govern how NMDARs operate in brain processing. The volume includes a detailed introductory chapter describing the field and is divided into three parts. Topics covered in the volume include: quantification of NMDAR subunit genes expression by qRT-PCR; detection of NMDARs antibodies in encephalitis; recombinant channels in host cells using a fast agonist application system; GluNs detection and functions in microglial cells; and NMDARs as voltage sensors. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Cutting-edge and practical, NMDA Receptors: Methods and Protocols is a valuable resource that discusses the diversity of the currently-used methods, the importance of NMDARs and their complexity, and the progress that has already been made. This book will be of interest to scientists, clinicians, and industry professionals working in this field.

NMDA Antagonists as Potential Analgesic Drugs Apr 23 2022 There is now considerable preclinical evidence that glutamate acting via the NMDA receptor is involved in the transmission of nociceptive information and in the triggering mechanisms for hyperalgesia and allodynia. This evidence allows rational development of a new class of analgesic drugs that act as antagonists of the NMDA receptor, supported by emerging evidence with existing excitatory amino acid antagonists. Leading scientists in excitatory amino acid and analgesia research have compiled in this volume the most recent information on molecular biology, physiology and pharmacology of NMDA receptors, their neuroanatomical localisation within specific neural pathways involved in nociception, and experimental and clinical evidence demonstrating the potential of receptor antagonists of NMDA and other excitatory amino acids in the treatment of pain states.

GABA And Glutamate Nov 06 2020 This book collates the contributions of a selected number of neuroscientists that are interested in the molecular, preclinical, and clinical aspects of neurotransmission research. The seven chapters in this book address the latest research/review data related to GABA/glutamate system's organization and function, the structure of receptors, subtypes and their ligands, as well as the translational approach and clinical implications. The book offers readers a rich collection of data regarding current and future applications of GABA and glutamate neurotransmission, including promising research strategies and potential clinical benefits.

The Essence of Analgesia and Analgesics Sep 16 2021 The Essence of Analgesia and Analgesics is an invaluable practical resource for clinicians giving pain relief in any clinical setting, describing the pharmacologic principles and clinical use of all available pain medications. As well as detailed overviews of pain processing and analgesic theory, sections are dedicated to oral and panteral opioid analgesics, neuraxial opioids, NSAIDs, local anesthetics, anticonvulsant type analgesics, NMDA antagonists, alpha adrenergic analgesics, antidepressant analgesics, muscle relaxants, adjuvant medications, and new and emerging analgesics. The concise format of the chapters allows for quick and easy reading and assimilation of information. Enhanced by summary tables and figures, each chapter provides an overview of a particular drug, covering chemical structure, mode of activity, indications, contraindications, common doses and uses, advantages and disadvantages, and drug related adverse events. Key references are also provided. Edited by leading experts in pain management, this is essential reading for any clinician involved in pain management.

Neuronal Dynamics Feb 09 2021 This solid introduction uses the principles of physics and the tools of mathematics to approach fundamental questions of neuroscience.

Ageing and Dementia Aug 03 2020 Epidemiological studies, modern clinical, neuroimaging, neuropsychological, molecular biological, and genetic studies have considerably enhanced our knowledge about ageing processes of the human brain, its sequelae, diagnostic, and therapeutic possibilities and limits. In addition to Alzheimer's disease and other degenerative dementias, the impact of cerebrovascular lesions and their risk factors in the pathogenesis of cognitive disorders of the aged are increasingly acknowledged, and the recognition of mild cognitive impairment as a frequent initial stage of developing dementia is becoming an increasingly important diagnostic and therapeutic problem. The included papers were presented at the 7th International Symposium in Graz, Sept. 2001 and give a timely overview of the current and future concepts of pathogenesis, diagnosis, and treatment strategies of pathological brain ageing and dementias, early recognition of mild cognitive impairment and future possiblities of prevention of dementing processes.

Attention Deficit Hyperactivity Disorder in Children and Adolescents Feb 27 2020 ADHD in children and adolescents is a neurodevelopmental disorder, which is recognized by the clinicians all over the world. ADHD is a clinical diagnosis based on reliable history, reports from home and school and a physical examination to rule out any other underlying medical conditions. ADHD can cause low self-esteem in the child and impair quality of life for the child and the family. It is known that ADHD is a chronic illness and that clinicians needed to use chronic illness principles in treating it. The last 10 years have seen an increase in the number of medications that have been approved for the treatment of ADHD. This book has tried to address some of the issues in ADHD.

NMDA Antagonists as Potential Analgesic Drugs Nov 25 2019 Dalip J. S. Sirinathsinghii and Ray G. Hill Merck, Sharp & Dohme Research Laboratories, Neuroscience Research Centre, Terlings Park, Eastwick Road, Harlow, Essex CM20 2QR, UK There remains a distinct medical need for new pain therapies. Therefore, it is not surprising that in recent years there has been a major research initiative in both aca demic and pharmaceutical laboratories to identify novel pain targets and to devel op novel analgesic drugs. It is clear from numerous studies that the NMDA recep tor plays a major role in the transmission ofnociceptive information and it has been a subject of extensive investigation over the last decade exploiting the advances of molecular pharmacology and molecular neuroanatomy. As a consequence there has been a rational approach by several laboratories to develop receptor subtype-spe cific NMDA antagonists in order to avoid the wide range of side-effects seen with non-selective NMDA ion channel antagonists such as ketamine. This volume brings together contributions from experts in various technological disciplines who have contributed immensely to NMDA receptor research and advanced our understanding of the subunit composition of the NMDA receptor complex, its pharmacology and distribution, its interaction with other neurochemi cal systems and the effects on behaviour of NMDA antagonists in rodent models and in the clinic. In consideration of these advances and the prospects of novel NMDA receptor antagonists in the near future for the treatment of pain, this vol ume is very timely.

Magnesium in the Central Nervous System Mar 10 2021 The brain is the most complex organ in our body. Indeed, it is perhaps the most complex structure we have ever encountered in nature. Both structurally and functionally, there are many peculiarities that differentiate the brain from all other organs. The brain is our connection to the world around us and by governing nervous system and higher function, any disturbance induces severe neurological and psychiatric disorders that can have a devastating effect on quality of life. Our understanding of the physiology and biochemistry of the brain has improved dramatically in the last two decades. In particular, the critical role of cations, including magnesium, has become evident, even if incompletely understood at a mechanistic level. The exact role and regulation of magnesium, in particular, remains elusive, largely because intracellular levels are so difficult to routinely quantify. Nonetheless, the importance of magnesium to normal central nervous system activity is self-evident given the complicated homeostatic mechanisms that maintain the concentration of this cation within strict limits essential for normal physiology and metabolism. There is also considerable accumulating evidence to suggest alterations to some brain functions in both normal and pathological conditions may be linked to alterations in local magnesium concentration. This book, containing chapters written by some of the foremost experts in the field of magnesium research, brings together the latest in experimental and clinical magnesium research as it relates to the central nervous system. It offers a complete and updated view of magnesiums involvement in central nervous system function and in so doing, brings together two

main pillars of contemporary neuroscience research, namely providing an explanation for the molecular mechanisms involved in brain function, and emphasizing the connections between the molecular changes and behavior. It is the untiring efforts of those magnesium researchers who have dedicated their lives to unraveling the mysteries of magnesiums role in biological systems that has inspired the collation of this volume of work.

Rapid Acting Antidepressants Oct 17 2021 The Advances in Pharmacology series presents a variety of chapters from the best authors in the field. Includes the authority and expertise of leading contributors in pharmacology Presents the latest release in the Advances in Pharmacology series

Brain Injury and Pediatric Cardiac Surgery Dec 27 2019 An estimated 30,000 children are born in the USA with congenital heart disease each year, two thirds of which will require corrective surgery. Medical advances have formed a trend of operating on newborns rather than waiting until the child is older. Ten years ago, the mortality for these operationswas 60% to 70%. That percentage has dropped to 2%. This specialized book explores the basic mechanisms of neurologic injury associated with congenital heart surgery while covering the emerging technologies for assessment of neurologic integrity and injury. The text also highlights the current and future techniques for reducing and preventing these injuries, and reviews the pertinent medicolegal issues.

The Ionotropic Glutamate Receptors Sep 04 2020 The Ionotropic Glutamate Receptors provides the first detailed survey of the biochemical, physiological, and pharmacological properties of recombinant ionotropic glutamate receptors. The distinguished contributors show how the molecular characteristics of these receptors account for many of the properties of native ionotropic glutamate receptors. They also examine in detail the properties of glutamate receptor subunits, including receptor modulation by phosphorylation and the anatomical localization of specific glutamate receptor subunits as determined by in situ hybridization and immunochemistry. The Ionotropic Glutamate Receptors conveys the first clear insights into the molecular bases underlying the wealth of pharmacological and physiological data on these receptors.

Autoimmune Neurology Aug 15 2021 Autoimmune Neurology presents the latest information on autoimmune neurologic disease, the immune response to the body where organs run wild, causing the immune system to attack itself. Autoimmunity is a main element in numerous nervous system diseases and can target any structure within the central or peripheral nervous system. Over the past 20 years, significant advances in our understanding of the pathophysiology of autoimmune disorders, including the use of biomarkers has led to new diagnosis and treatment options. Neurologic conditions associated with autoimmune reactions include dementia, neuromuscular disease, epilepsy, sleep disorders, diabetes, and other common neurologic disorders and disease. This current tutorial-reference will be a must-have title for clinical neurologists, research neurologists, neuroscientists, and any medical professional working with autoimmune disease and disorders. Includes comprehensive coverage of autoimmune neurology Details the latest techniques for the study, diagnosis, and treatment of diseases and disorders, including dementia, neuromuscular disease, epilepsy, and sleep disorders Presents a focused reference for clinical practitioners and the clinical neurology and neurology research communities

Focus on Extrapyramidal Dysfunction Jan 08 2021 Experts in the fields of neurology, neuroscience, neurobiology and psychiatry review and present novel findings of basic and clinical research on extrapyramidal disorders and allied conditions. New insights on the nature of extrapyramidal dysfunction and its therapy in the fields of neurology, psychiatry and neuroscience are presented.

Ketamine Jun 01 2020 This book presents the latest data from basic research and clinical trials supporting the effectiveness of ketamine as a treatment for depression, bipolar disorder, and suicidal behavior, setting these positive findings within the context of the serious problem of ketamine abuse. The first part of the book focuses on the evidence regarding ketamine abuse, with specific reference to Asian countries, and discusses countermeasures and complication management. It then addresses the mechanisms underlying the antidepressant and side effects of ketamine, which have remained elusive, describing and discussing important new research findings. Further, it explains insights gained from whole brain imaging in rodents and from behavioral pharmacology, and presents evidence regarding the role of gut microbiota, the NMDA receptor GluN2D subunit, and the lateral habenula in the actions of ketamine. These advances form the basis for the safer use of ketamine in patients with treatment-resistant depression and are expected to lead to the development of new antidepressants.

Glutamate and GABA Receptors and Transporters May 12 2021 The ubiquitous presence of glutamate and GABA receptors in the nervous system makes these receptor systems pivotal to our understanding of neurotransmission. Cloning of the molecular components of these receptor systems has provided insights to the selectivity of many drugs and detailed characterisation at the molecular level is emerging. Moreover, continuous development of novel and selective drugs has revealed detailed information on the mechanism of receptor activation and regulation. However, the rapid development of different aspects of glutamate and GABA receptor research makes it increasingly difficult to establish a general view of the field. Studies of the receptors are a multi-disciplinary task employing many specialised techniques. This book conveys recent discoveries in a framework of the basic concepts in the field of glutamate and GABA receptor research. Glutamate and GABA Receptors and Transporters: Structure, Function and Pharmacology is suitable for postgraduate students studying ligand gated channels but also beneficial for industrial and academic research scientists in both the glutamate and GABA field. Universities offering programs in neuroscience, molecular pharmacology or medicinal chemistry will find this a valuable reference.

Animal Models of Cognitive Impairment Aug 27 2022 The costs associated with a drug’s clinical trials are so significant that it has become necessary to validate both its safety and efficacy in animal models prior to the continued study of the drug in humans. Featuring contributions from distinguished researchers in the field of cognitive therapy research, Animal Models of Cognitive Impairment examines some of the most popular and successful animal archetypes used in the context of drug discovery. It provides integrated coverage of the latest research concerning neuronal systems relevant to cognitive function and dysfunction, assimilating reviews of this research within the context of each chapter. This approach is unique in that it brings together molecular and neurochemical methodologies, behavioral applications in translational models, and clinical applications. The book comprehensively discusses a wide variety of animal models of cognitive impairment, including genetic, lesion, pharmacological, and aging related impairments. It also explores the significance of this research in regards to the treatment of various addictions and disorders such as stroke, autism, Alzheimer’s, schizophrenia, and ADHD. Edited by two renowned authorities in the field, Animal Models of Cognitive Impairment is a timely book that provides integrated coverage of cutting-edge research that concerns neuronal systems relevant to cognitive function and dysfunction.

Brain On Fire: My Month of Madness Jan 20 2022 'My first serious blackout marked the line between sanity and insanity. Though I would have moments of lucidity over the coming days and weeks, I would never again be the same person ...' Susannah Cahalan was a happy, clever, healthy twenty-four-year old. Then one day she woke up in hospital, with no memory of what had happened or how she had got there. Within weeks, she would be transformed into someone unrecognizable, descending into a state of acute psychosis, undergoing rages and convulsions, hallucinating that her father had murdered his wife; that she could control time with her mind. Everything she had taken for granted about her life, and who she was, was wiped out. Brain on Fire is Susannah's story of her terrifying descent into madness and the desperate hunt for a diagnosis, as, after dozens of tests and scans, baffled doctors concluded she should be confined in a psychiatric ward. It is also the story of how one brilliant man, Syria-born Dr Najar, finally proved - using a simple pen and paper - that Susannah's psychotic behaviour was caused by a rare autoimmune disease attacking her brain. His diagnosis of this little-known condition, thought to have been the real cause of devil-possessions through history, saved her life, and possibly the lives of many others. Cahalan takes readers inside this newly-discovered disease through the progress of her own harrowing journey, piecing it together using memories, journals, hospital videos and records. Written with passionate honesty and intelligence, Brain on Fire is a searingly personal yet universal book, which asks what happens when your identity is suddenly destroyed, and how you get it back. 'With eagle-eye precision and brutal honesty, Susannah Cahalan turns her journalistic gaze on herself as she bravely looks back on one of the most harrowing and unimaginable experiences one could ever face: the loss of mind, body and self. Brain on Fire is a mesmerizing story' -Mira Bartók, New York Times bestselling author of The Memory Palace Susannah Cahalan is a reporter on the New York Post, and the recipient of the 2010 Silurian Award of Excellence in Journalism for Feature Writing. Her writing has also appeared in the New York Times, and is frequently picked up by the Daily Mail, Gawker, Gothamist, AOL and Yahoo among other news aggregrator sites.

Glutamate-Related Biomarkers in Drug Development for Disorders of the Nervous System Jul 02 2020 Glutamate is the most pervasive neurotransmitter in the central nervous system (CNS). Despite this fact, no validated biological markers, or biomarkers, currently exist for measuring glutamate pathology in CNS disorders or injuries. Glutamate dysfunction has been associated with an extensive range of nervous system diseases and disorders. Problems with how the neurotransmitter glutamate functions in the brain have been linked to a wide variety of disorders, including schizophrenia, Alzheimer's, substance abuse, and traumatic brain injury. These conditions are widespread, affecting a large portion of the United States population, and remain difficult to treat. Efforts to understand, treat, and prevent glutamate-related disorders can be aided by the identification of valid biomarkers. The Institute of Medicine's Forum on Neuroscience and Nervous System Disorders held a workshop on June 21-22, 2010, to explore ways to accelerate the development, validation, and implementation of such biomarkers. Glutamate-Related Biomarkers in Drug Development for Disorders of the Nervous System: Workshop Summary investigates promising current and emerging technologies, and outlines strategies to procure resources and tools to advance drug development for associated nervous system disorders. Moreover, this report highlights presentations by expert panelists, and the open panel discussions that occurred during the workshop.
The NMDA Receptors May 24 2022 This volume provides a history of and an update on the functional status of the NMDA receptors. The NMDA receptors are essential for neuronal development, synaptic plasticity, learning, and cell survival. It covers molecular, cellular, anatomical, biochemical, and behavioral aspects, to highlight their distinctive regulatory properties, their functional significance, and their therapeutic potential in a number of diseases. A group of international experts discuss the development of NMDA receptors, their basic functions, and how they are implicated in a wide range of diseases including depression, psychosis, and pain.
Toward a Molecular Basis of Alcohol Use and Abuse Dec 19 2021 The 39 chapters in this volume consider subjects ranging from genetics, markers, and molecular biology of alcoholism, to clinical observations and treatment. The aim is to integrate pertinent information from the fields of molecular and cell biology with view to establishing a molecular basis of alcohol use and abuse. An initial preview summarizes historical aspects of alcohol use, and subsequent chapters concern novel drugs, pharmacological aspects, gene structures, cloning, and enzymatic properties. Also contributions by "non-traditional" alcohol scientists have been included in this collection, in order to highlight possible interaction and parallels between different fields. Novel results of particular interest include up-dated summaries on receptors, enzymes, and other proteins, as well as corresponding gene structures and regulation, setting the basis for distinguishing markers and pinpointing further possible pharmacological treatments.
The Glutamate Receptors Dec 07 2020 This insightful and comprehensive book covers nearly every aspect of glutamate receptor structure and function for the working researcher and student. It condenses two previous landmark volumes into one easily accessible volume, and covers the extraordinary research and significant developments in the decade since the previous books were published. This includes the central role glutamate receptors play in neurotransmission.
The NMDA Receptor Feb 21 2022 This comprehensive volume updates coverage on the NMDA receptor - an important protein in the brain involved in the electrical and chemical processes which may underlie learning and memory. These receptors are also thought to contribute to, for example, stroke-induced brain damage.
Biology of the Nmda Receptor Sep 28 2022 The NMDA receptor plays a critical role in the development of the central nervous system and in adult neuroplasticity, learning, and memory. Therefore, it is not surprising that this receptor has been widely studied. However, despite the importance of rhythms for the sustenance of life, this aspect of NMDAR function remains poorly studied. Written by one of the world's leading authorities on NMDA receptors, Biology of the NMDA Receptor brings together virtually all the players in this important field.
Post-Transcriptional Control of NMDA Receptor Expression Sep 23 2019 N-methyl-D-aspartate receptors (NMDARs) are indispensable for brain development and function. Both NMDAR hypo- and hyperfunction contribute to the pathophysiology of a variety of neurological and psychiatric diseases. The papers collected in this special issue summarize the current knowledge regarding the post-transcriptional regulation of NMDA receptor expression. The expression of NMDA receptors in the fetus and newborn is reviewed as well as its response in the central nervous system to noxious stimuli during early development. Evidence and mechanisms for controlling functional expression of NMDA receptor trafficking are summarized and discussed. Neurobiologists will find a collection of essential and up-to-date information on mechanisms regulating the expression of NMDA receptors which are central to physiological and pathophysiological brain function. Cell biologists will appreciate how basic mechanisms of post-trancriptional regulation of gene expression contribute to brain development, function and disease.
Nmda Antagonists As Potential Analgesic Drugs Nov 18 2021 There is now considerable preclinical evidence that glutamate acting via the NMDA receptor is involved in the transmission of nociceptive information and in the triggering mechanisms for hyperalgesia and allodynia. This evidence allows rational development of a new class of analgesic drugs that act as antagonists of the NMDA receptor, supported by emerging evidence with existing excitatory amino acid antagonists. Leading scientists in excitatory amino acid and analgesia research have compiled in this volume the most recent information on molecular biology, physiology and pharmacology of NMDA receptors, their neuroanatomical localisation within specific neural pathways involved in nociception, and experimental and clinical evidence demonstrating the potential of receptor antagonists of NMDA and other excitatory amino acids in the treatment of pain states.
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The NMDA Receptor Jul 26 2022 Research into the function of the NMDA receptor has exploded in recent years. This volume contains the proceedings of a symposium organized by the Bristol Group, which addresses the latest developments in the field.
Mechanisms of Memory Jul 14 2021 This fully revised second edition provides the only unified synthesis of available information concerning the mechanisms of higher-order memory formation. It spans the range from learning theory, to human and animal behavioral learning models, to cellular physiology and biochemistry. It is unique in its incorporation of chapters on memory disorders, tying in these clinically important syndromes with the basic science of synaptic plasticity and memory mechanisms. It also covers cutting-edge approaches such as the use of genetically engineered animals in studies of memory and memory diseases. Written in an engaging and easily readable style and extensively illustrated with many new, full-color figures to help explain key concepts, this book demystifies the complexities of memory and deepens the reader’s understanding. More than 25% new content, particularly expanding the scope to include new findings in translational research. Unique in its depth of coverage of molecular and cellular mechanisms Extensive cross-referencing to Comprehensive Learning and Memory Discusses clinically relevant memory disorders in the context of modern molecular research and includes numerous practical examples
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Evidence-based Clinical Practice Guideline for Deprescribing Cholinesterase Inhibitors and Memantine Oct 25 2019