Advances In Vasopressin And Oxytocin From Genes To Behaviour To Disease Volume 170 Progress In Brain Research

A comparative overview of the effects of neuropeptides on behavior, examining parallel findings in both humans and non-human animals.

Vasopressins—Advances in Research and Application: 2012 Edition is a ScholarlyBrief™ that delivers timely, authoritative, comprehensive, and specialized information about Vasopressins in a concise format. The editors have built Vasopressins—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Vasopressins in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Vasopressins—Advances in Research and Application: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority,

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This valuable book, written by eminent researchers, focuses on the exciting developments in the field of alcohol metabolism and alcohol-endocrine interactions. They contribute significantly to our understanding of the metabolism of ethanol and its effects on the body with comprehensive chapters on the heterogeneity of aldehyde dehydrogenase, alcohol-drug interactions, the pathogenesis of alcoholic liver disease, and more.

Advances in Brain Vasopressin elucidates the functions of the regulatory peptide vasopressin in the nervous system, and reviews the current status of this field at different levels. It deals with the cell biology and anatomy of the neurons that produce vasopressin in the brain, and provides an overview on the receptors of vasopressin and the signal transduction pathways that they activate, including the cellular responses that are triggered by vasopressin. Reviews are presented on the modulation of behavior induced by vasopressin in a number of different contexts, such as sex-linked and steroid-dependent behaviors, social behaviors, and learning and memory. Furthermore, the volume deals with several controversial issues in the field by presenting overlapping chapters from different research groups in order to provide the reader with current views. Highly relevant and useful, for those

working on this "first" neuropeptide, and for young investigators entering the field, and in addition, shows how important a multidisciplinary approach is to unravelling the function of a neuropeptide in the brain.

The objective of this series is to provide concise and critical information on current advances in the different domains of sensory physiology. It will be of interest to all who want to keep abreast of the latest developments in the field - from the level of the receptor to that of the cortex, including neuropsychological and psychophysical aspects.

Advances in Genetics

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Vasopressin and oxytocin are the key hormones of the hypothalamo-neurohypophysial system, and are well-known to be critically involved in antidiuresis, labor, and milk ejection. This book highlights the latest research on vasopressin and oxytocin, covering multiple biological aspects. The capacity of both hormones to regulate various aspects of social behaviours including pair-bonding, aggression, maternal love, and sexual behaviour, is a main focus, as are their interactions with a variety of other neuromodulators and transmitters. Moreover, the book illustrates the recent development of vasopressin and oxytocin agonists/antagonists as potential drugs to treat not only disturbances of body fluid homeostasis, but also mental disorders, including social phobia, autism, anxiety, and depression. The promising combination of basic and clinical research, comprising physiology, neuroendocrinology, behavioral biology, pharmacology, imaging and molecular genetics makes this book an essential addition to both experts and scientists new to the field alike. • Comprehensive review of OXT and AVP physiology and behaviour • Each chapter covers a novel aspect of OXT and AVP research and is written by a leading expert • Review articles are ideal for experts and newcomers to the field

alike • Discusses fascinating behavioural effects of oxytocin and vasopressin • Summarizes the recent explosion of neuropeptide research, physiology and behaviour, is in one location

Comprehensive Human Physiology is a significantly important publication on physiology, presenting state-of-the-art knowledge about both the molecular mechanisms and the integrative regulation of body functions. This is the first time that such a broad range of perspectives on physiology have been combined to provide a unified overview of the field. This groundbreaking two-volume set reveals human physiology to be a highly dynamic science rooted in the ever-continuing process of learning more about life. Each chapter contains a wealth of original data, clear illustrations, and extensive references, making this a valuable and easy-to-use reference. This is the quintessential reference work in the fields of physiology and pathophysiology, essential reading for researchers, lecturers and advanced students.

Clinical Neuroendocrinology covers the clinical significance of the advances made in the understanding of relationships between the actions of neurotransmitters and the hypothalamic control of pituitary secretions. This book contains 24 chapters that examine the interactions of target gland secretions with the effects of hypothalamic and pituitary hormones. This book begins with a discussion of the physiological regulation and clinical applications of thyrotropin-stimulating hormone and thyrotropin-releasing hormone. The subsequent chapters are devoted to neuroendocrine aspects,

secretion, regulation, and analysis of gonadotropin and gonadotropin-releasing hormone. Other chapters explore the regulations, tests, therapeutic implications, and clinical physiology of growth hormones and prolactin. This text also considers the chemical nature, brain pathways, mode of action, and clinical significance of other hormones, including corticotropin-releasing factor, melanocyte-stimulating hormone release-inhibiting factor, melanocyte-stimulating hormone, and related pituitary peptides. The remaining chapters examine the control mechanisms and pathophysiology of vasopressin, oxytocin, and neurophysins. Clinical neuroendocrinologists and researchers will find this book of great value.

Posterior Pituitary Hormones—Advances in Research and Application: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Vasopressins. The editors have built Posterior Pituitary Hormones—Advances in Research and Application: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Vasopressins in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Posterior Pituitary Hormones—Advances in Research and Application: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available

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Vasopressin, Volume 113 in the Vitamins and Hormones series, highlights new advances in the field, with this new volume presenting updates on timely topics, including Diabetes Insipidus in Pregnancy, Vasopressin Inactivation: Role of Insulin-Regulated Aminopeptidase, Vasotocin and the Origins of the Vasopressin/Oxytocin Receptor Gene Family, Vasopressin V2 Receptor Ligand Recognition, Development and Therapeutic Potential of Vasopressin Synthetic Analog [V4Q5]dDAVP as a Novel Anticancer Agent, Cellular Junctions and Vasopressin, Vasopressin Actions in the Kidney Renin Angiotensin System and its Role in Hypertension and Renal Disease, Oxytocin/Vasopressin-Like Neuropeptide Signaling in Insects, and much more.

Advances in Vasopressin and Oxytocin - From Genes to Behaviour to DiseaseElsevier

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This monograph provides a comprehensive overview of recent advances in the field of vasopressin and oxytocin. In the summer of 1997, scientists from over 20 countries congregated in Montreal for the 1997 World Congress of Neurohypophysial Hormones, a conference that united the fields of vasopressin, neurohypophysis and oxytocin in a single joint meeting that gave rise to the present book. The organization of a joint meeting was prompted by several recent developments. Specifically the molecular characterization of the vasopressin/oxytocin receptor family made it mandatory to adopt an integrated view and to discuss the vasopressin/oxytocin ligand/receptor family as a whole. To ensure em phasis on novelty, the conference focused on advances made over the last two years and also included important contributions by scientists that had not previously been associated with the vasopressin/oxytocin field. Vasopressin and oxytocin are two neurohormones that exert a wide spectrum of cen tral and peripheral actions. Accordingly, the vasopressin/oxytocin field embraces a

large number of different domains, ranging from neuroscience, endocrinology, and oncology to renal, reproductive, and cardiovascular physiology and pathology.

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Advances in Oxytocin Research documents the proceedings of a symposium held by the Blair-Bell Research Society at the Royal College of Obstetricians and Gynecologists, London, England, on 1st May 1964. Oxytocin was chosen as the subject of the symposium

due to recent important work on its physiology and pharmacology, and the availability of a new method of administering the drug for the induction of labor in women after extensive study in America, Europe, and Great Britain. The volume contains papers presented by during the two sessions held during the symposium. The first session on the physiology and pharmacology of oxytocin includes studies on the circulatory effects of oxytocin, release of oxytocin during parturition, and the release of oxytocin in domestic animals. The second session on clinical applications includes papers on the endocrine control of labour, clinical trials of buccal oxytocin, and tge oxytocin sensitivity test. Also included are the opening remarks by Sir Arthur Bell, President of the Blair-Bell Society and the Chairman's Introduction at the beginning of each session.

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This volume presents state-of-the-art research from the various disciplines that define the leading edges of bladder research. The latest developments are presented, as well as an analysis of current research, new tactics for unresolved problems, critical evaluations of current theories, together with the development of new theories and approaches as needed. The volume is divided into five sections: Epithelial-Mesenchymal Interactions in the Bladder; Muscle and Extracellular Matrix in the Bladder; Nerves and Pharmacology in the Bladder; Infection, Immunology, and Interstitial Cystitis in the Bladder; and Cancer of the Bladder.

Studying the relationship between different aspects of social

behaviour and the oxytocin system in nonhuman animal species is a promising research area which may also have translational relevance for understanding the neuro-hormonal bases of human social cognitive abilities. In order to advance our understanding of social-behavioural effects of oxytocin, this Research Topic eBook collects together contributions from researchers in social cognition and related fields, whose work addresses cutting-edge questions and important gaps in our knowledge of the behavioural effects of oxytocin in dogs and other domestic species.

The concept for Vasopressin: Principles and Properties originated during the sum mer of 1983. From reviewing the rich and diverse literature on vasopressin, it became evident that the rapid advancements in this field made it difficult to syn thesize the information gathered from divergent scientific disciplines into a coherent view of the biological role of vasopressin. We perceived the need for a series of critical reviews delineating this recent progress. Over the past decade, major advances have been made in studies of the anatomy, physiology, phar macology, molecular biology, and behavioral activities of vasopressin. This is, in no small measure, due to the finding that vasopressin can no longer be regarded solely as a neurohypophysial hormone. Our present knowledge is that vasopressin is synthesized in also has an axonal messenger role in the nervous system and of the brain, although the functions of vasopressin in these periph sites outside of vasopressin eral sites are not well understood. In order to prepare an overview concentrating on recent studies in vertebrates, authors were selected based on their expertise and asked to review their research area, including the work from other laboratories. It was our intent to provide an updated definitive reference which would complement and extend such past texts as Neurohypophysial Hor mones and Similar Polypeptides (Handbook of

Experimental Pharmacology, Vol ume XXIII, 1968) and The Pituitary Gland and Its Neuroendocrine Control (Handbook of Physiology, Section 7: Volume IV, 1974).

The mechanisms by which animals regulate the volume and composition of their body fluids has long had a particular fascination for students of biology. As a consequence, the subject can lay claim to an impressive record of ground breaking scientific achievements as well as a provocative body of philosophical speculation concerning the role of the system in the origin and evolution of life. Indeed, the entire concept of homeostasis on which so much of o~r current biologic thinking is based, derives from Claude Bernard's pioneering exploration of the forces that determine the composition of this 'internal sea'. Other seminal achievements credited to this area of inquiry include the first description of a genetically transmitted human disease (familial neurogenic diabetes insipidus); the first isolation sequencing and synthesis of a peptide hormone (vasopressin and oxytocin); the first demonstration of peptide hormone synthesis by way of a larger protein precursor; the first description of resistance to the biologic actions of a hormone (nephrogenic diabetes insipidus); and the conceptual realization of the unique counter-current mechanism that permits concentration of the urine. This record of far reaching and fundamental advances has been distinguished by many fruitful inter actions between clinical and basic science.

Our brain is endowed with an incredible capacity to be social, to trust, to cooperate, to be altruistic, to feel empathy and love. Nevertheless, the biological underpinnings of such behaviors remain partially hardwired. Seminal research in rodents has provided important insights on the identification of specific genes in modulating social behaviors, in particular, the arginine vasopressin receptor and the oxytocin receptor genes. These genes are involved in regulating a wide range

of social behaviors, mother-infant interactions, social recognition, aggression and socio-sexual behavior. Remarkably, we now know that these genes contribute to social behavior in a broad range of species from voles to humans. Indeed, advances in human non-invasive neuroimaging techniques and genetics have enabled scientists to begin to elucidate the neurobiological basis of the complexity of human social behaviors using "pharmacological fMRI" and "imaging genetics". Over the past few years, there has been a strong interest focused on the role of oxytocin in modulating human social behaviors with translational relevance for understanding neuropsychiatric disorders, such as autism, schizophrenia and depression, in which deficits in social perception and social recognition are key phenotypes. The convergence of this interdisciplinary research is beginning to reveal the complex nature of oxytocin's actions. For instance, the way that oxytocin does influence social functioning is highly related to individual differences in social experiences, but also to the inter-individual variability in the receptor distribution of this molecule in the brain. Remarkably, despite the increasing evidence that oxytocin has a key role in regulating human social behavior, we still lack of knowledge on the core mechanisms of action of this molecule. Understanding its fundamental actions is a crucial need in order to target optimal therapeutic strategies for human social disorders. The originality of this Research Topic stands on its translational focus on bridging the gap between fundamental knowledge acquired from oxytocin research in voles and monkeys and recent clinical investigations in humans. For instance, what are the key animal findings that can import further knowledge on the mechanisms of actions of this molecule in humans? What are the key experiences that can be performed in the animal model in order to answer significant science gaps in

the treatment of neuropsychiatric disorders? Hence, within this Research Topic, we will review the current state of the field, identify where the gaps in knowledge are, and propose directions for future research. This issue will begin with a comparative review that examines the role of this peptide in diverse animal models, which highlights the adaptive value of oxytocin's function across multiple species. Then, a series of reviews will examine the role of oxytocin in voles, primates, and humans with an eye toward revealing commonalities in the underlying brain circuits mediating oxytocin's effects on social behavior. Next, there will be a translational review highlighting the evidence for oxytocin's role in clinical applications in psychopathology. Hence, via the continuum of basic to translational research areas, we will try to address the important gaps in our understanding of the neurobiological routes of social cognition and the mechanisms of action of the neuropeptides that guide our behaviors and decisions.

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The Roles of Vasopressin and Oxytocin in Memory Processing reviews research progress in a subfield of Behavioral Pharmacology concerned with vasopressin's (VP's) and oxytocin (OT's) roles in memory processing (MP). As hormones, VP is well-known for its pressor and antidiuretic action, and OT for its contribution to parturition and nursing. As neurotransmitters, they participate in a wide variety of self- and species-preserving functions expressed at psychological, physiological and behavioral levels. Advances in Pharmacology is available online on ScienceDirect — full-text online of volumes 48 onwards. Elsevier book series on ScienceDirect gives multiple users throughout an institution simultaneous online access to an important compliment to primary research. Digital delivery ensures users reliable, 24-hour access to the latest peer-reviewed content. The Elsevier book series are compiled and written by the most highly regarded authors in their fields and are selected from across the globe using Elsevier's extensive researcher network. For more information about the Elsevier Book Series on ScienceDirect Program, please visit: http://www.info.sciencedirect.com/bookseries/ * Comprehensive coverage of both alternative theories and relevant research * Several key chapters reviewed by researchers whose studies and theories formed the subject matter of these chapters * Basic laboratory research focus with potential application for understanding and treating human memory disorders

The articles comprising this volume were first presented at the World Congress on Neurohypophysial Hormones held in Bordeaux, France on September 8-12, 2001. This conference

brought together more than 170 scientists from 18 countries who belong to the different fields of interest representing research in the hypothalamo-neurohypophysial system. Two neurohypophysial neurohormones, oxytocin and vasopressin, exert a variety of central and peripheral actions and thus involve different scientific domains, which too often, even today, do not always find the appropriate occasion to interact. This volume is composed of chapters dealing with topics varying from basic and clinical neurosciences and neuroendocrinology, to reproductive, renal, cardiovascular physiology and pathology. It encompasses all areas of current neurohypophysial research and should be of vital interest as an integrative reference volume to specialized investigators and as an excellent introductory text to students, scientists and clinicians not yet closely familiar with the field. To ensure novelty and to make sure that all topics of current importance were covered, plenary and symposium speakers as well as poster presentations concentrated on recent advances made in the last few years.

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This book provides a comprehensive overview of our current understanding of binge eating, which is characterized by the uncontrollable consumption of large amounts of food in a discrete time period. Written by experts on eating disorders, it first introduces the phenotype of binge eating, including its epidemiology and assessment. It then describes the underlying neurobiological alterations, drawing on cutting-edge animal models and human studies to do so. In addition, it extensively discusses current treatment models, including medication, psychotherapy, self-interventions and disease prevention. Lastly, an outlook on the future research agenda rounds out the coverage. Given binge eating's current status as an under-researched symptom, but one shared across many eating disorders, this book provides an up-to-date, integrative and comprehensive synthesis of recent research and offers a valuable reference for scientists and clinicians alike.

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Peptides play a crucial role in many physiological processes including actions as neurotransmitters, hormones, and antibiotics. Research has shown their importance in such fields as neuroscience, immunology, pharmacology, and cell biology. The Handbook of Biologically Active Peptides presents, for the first time, this tremendous body of knowledge in the field of biologically active peptides in one single reference. The section editors and contributors represent some of the most sophisticated and distinguished scientists working in basic sciences and clinical medicine. The Handbook of Biologically Active Peptides is a definitive, all-encompassing reference that will be indispensable for individuals ranging from peptide researchers, to biochemists, cell and molecular biologists, neuroscientists, pharmacologists, and to endocrinologists. Chapters are designed to be a source for workers in the field and will enable researchers working in a specific area to examine other related areas with which they would not ordinarily be familiar. *Chapters are designed to be a source for workers in the field and will enable researchers working in a specific area to examine other related areas that they would not ordinarily be familiar. *Fascinating relationships described in the book include the presence of some peptides originally found in frog skin that persist in the human human and brain where they can affect food intake and obesity.