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H.-W. Korf C. Schomerus J. H. Stehle

**The Pineal Organ,
Its Hormone Melatonin,
and the
Photoneuroendocrine
System**



Springer

Pineal Organ Its Hormone Melatonin And The Photoneuroendocrine System

Francisco Lopez-Munoz, Cecilio Alamo



Pineal Organ Its Hormone Melatonin And The Photoneuroendocrine System:

The Pineal Organ, Its Hormone Melatonin, and the Photoneuroendocrine System Werner Korf, Christof Schomerus, Jörg H. Stehle, 2012-12-06 Provides comprehensive updated information on the structure and cell and molecular biology of the vertebrate pineal organ which is the source of the timing hormone melatonin

The Pineal Gland and Cancer C. Bartsch, H. Bartsch, D.E. Blask, D.P. Cardinali, W.J.M. Hrushesky, Dieter Mecke, 2012-12-06 The link between the pineal gland and cancer is a rapidly emerging research field due to promising experimental and clinical trials with melatonin The pineal gland acts as a transducer of environmental light to regulate rhythmic processes including reproductive function in seasonally breeding animals and the entrainment of circadian rhythms such as the sleep wake cycle in man This book elucidates the physiological significance of the pineal gland and surveys phenomena and mechanisms of pineal tumor interaction at the neuroendocrine neuroimmune neural and molecular levels Yet unidentified low molecular weight pineal substances with tumor inhibiting capacity a possible involvement of melatonin in electromagnetic field effects on cancer and the oncotherapeutic potential of melatonin are also addressed The encouraging results should incite further research to elucidate the exact nature of the link between the pineal gland and cancer for the benefit of patients

The Pineal Organ, Its Hormone Melatonin, and the Photoneuroendocrine System Werner Korf, Christof Schomerus, Jörg H. Stehle, Provides comprehensive updated information on the structure and cell and molecular biology of the vertebrate pineal organ which is the source of the timing hormone melatonin

Rhythms in Fishes M.A. Ali, 2012-12-06 Tush my good lord this superficial tale Is but a preface of her worthy praise King Henry the Sixth Part I Act V Sc 5 This volume is the direct result of a NATO Advanced Study Institute ASI of the same title held at Bishop s University Lennoxville Quebec Canada in August 1991 All the major presentations had been commissioned so to speak during the organisational phase This was done with the view of not only having a structured ASI whIch is expected to be a high level tutorial activity but also the ensuing volume As will be indicated in the general introduction there have been a couple of meetings and publications dealing with rhythms in fishes in the past twenty years However as in other disciplines there has been substantial progress in this field also Further I wished to cover almost all aspects and come out with a volme which will be as complete as possible Of course this failed to materialise In spite of starting the arrangements two years before the event several lecturers were not able to attend due to a number of reasons Some could be replaced while others could not Taking into account their individual specialties I asked about twenty active workers in the field to provide provoking overviews not simply reviews of their own work Also this being a NATO

The Pineal Gland and its Endocrine Role J. Axelrod, 2013-12-01 The pineal gland has been a subject of interest and speculation for more than 2000 years Greek anatomists were impressed by the ob servation that the pineal gland is an unpaired structure and they believed that it regulated the flow of thoughts The philosopher Descartes proposed an important role for this organ in brain function At the beginning of the 20th century experiments by several investi gators indicated that the pineal

influenced sexual function and skin pigmentation and was also responsive to light signals With the isolation of melatonin from bovine pineal glands by Lerner and coworkers in 1958 the modern era of pineal research was initiated Within a few years the pathway for the biosynthesis of melatonin in the pineal was elucidated Soon thereafter it was shown that the formation of melatonin was influenced by environmental lighting Anatomists found that the pineal was innervated by sympathetic nerves and that the gland had photoreceptor elements It was also shown that the gonads were influenced by light via the pineal gland Research on the pineal gland became of increasing interest to anatomists biochemists pharmacologists and endocrinologists With the expanding knowledge concerning the function of the pineal gland contributed by the wide variety of disciplines it was thought that a study workshop would be timely

The Pineal Gland I. Nir, R. J. Reiter, R. J. Wurtman, 2015-01-07

Ecology of Atlantic Salmon and Brown Trout Bror Jonsson, Nina Jonsson, 2011-05-03 Destruction of habitat is the major cause for loss of biodiversity including variation in life history and habitat ecology Each species and population adapts to its environment adaptations visible in morphology ecology behaviour physiology and genetics Here the authors present the population ecology of Atlantic salmon and brown trout and how it is influenced by the environment in terms of growth migration spawning and recruitment Salmonids appeared as freshwater fish some 50 million years ago Atlantic salmon and brown trout evolved in the Atlantic basin Atlantic salmon in North America and Europe brown trout in Europe Northern Africa and Western Asia The species live in small streams as well as large rivers lakes estuaries coastal seas and oceans with brown trout better adapted to small streams and less well adapted to feeding in the ocean than Atlantic salmon Smolt and adult sizes and longevity are constrained by habitat conditions of populations spawning in small streams Feeding wintering and spawning opportunities influence migratory versus resident lifestyles while the growth rate influences egg size and number age at maturity reproductive success and longevity Further early experiences influence later performance For instance juvenile behaviour influences adult homing competition for spawning habitat partner finding and predator avoidance The abundance of wild Atlantic salmon populations has declined in recent years climate change and escaped farmed salmon are major threats The climate influences through changes in temperature and flow while escaped farmed salmon do so through ecological competition interbreeding and the spreading of contagious diseases The authors pinpoint essential problems and offer suggestions as to how they can be reduced In this context population enhancement habitat restoration and management are also discussed The text closes with a presentation of what the authors view as major scientific challenges in ecological research on these species

The Pineal Gland and Its Hormones Franco Fraschini, Russel J. Reiter, Bojidar Stankov, 2012-12-06 This volume contains the written contributions to the proceedings of a workshop related to the pineal gland and its hormones which was held in Erice Italy on June 7 June 13 1994 This series of workshops which began in 1982 and which have been held at four year intervals since that time has provided important continuity for advancing the state of knowledge relating to this very important investigative area The

enthusiasm for these conferences has increased steadily as reflected in the number of individuals applying to attend and in the input of individuals who participate in the meeting The 1994 meeting was important because of its timeliness In the two years preceding the meeting a number of revolutionary discoveries were made relative to the actions of the pineal hormone melatonin The *Xenopus* melatonin receptor was cloned melatonin was demonstrated to be a potent antioxidant the significance of melatonin receptors at the level of pars tuberalis in the regulation of the hypothalamo pituitary gonadal axis was questioned a number of melatonin receptor analogues were discovered and successfully utilized the mechanisms by which melatonin retards initiation and promotion of cancer was further elucidated the clinical aspects of the pineal gland were scrutinized Reviews relating to each of these subjects as well as many others are contained in this proceedings book This volume represents an up to date repository for the most recent information related to this rapidly advancing field

Melatonin in the Promotion of Health Ronald Ross Watson, 2011-08-25 Melatonin is a powerful hormone and antioxidant with numerous effects on the metabolism and the health of humans Available as a dietary supplement in the United States since 1993 it is one of the most popular over the counter alternative remedies available Comprising contributions from researchers who have studied the role of melatonin in various

Cumulated Index Medicus, 1999

Neurobiology of Depression Francisco Lopez-Munoz, Cecilio Alamo, 2011-09-09 Major depressive disorders have recently been associated with impairments in signaling pathways that regulate neuroplasticity and cell survival Agents designed to directly target molecules in these pathways hold promise as new therapeutics for depression With the collaboration of the most prestigious international specialists in biochemistry molecular biology genomics psychiatry psychology and pharmacology Neurobiology of Depression discusses the nature of the central nervous system circuits responsible for the modifications of neuronal functioning that lead to depression The book begins by discussing animal neurophysiological and neuropsychological models of depression as well as neural foundations It explores genetic factors that contribute to depression and describes the effect of monoaminergic systems in the central nervous system Next the book profiles the rise of psychopharmacology in the treatment of depression and the research into serotonin and monoamine reuptake inhibitors It examines the role of the glutamatergic endocannabinoid and opioid systems in the pathophysiology of mood disorders as well as the effect of biological rhythms on the human body Later chapters review the role of CRF related ligands CRF receptors HPA axis activity and glucocorticoid receptors in the regulation of the stress response and depression They also describe cytokine modulation of molecular mechanisms They examine the role of neuropeptide Y nitric oxide beta arrestins BDNF and phosphodiesterases and discuss the use of tachykinin antagonists in treatment Finally they analyze the neurobiological basis for the development of new antidepressant agents Exploring myriad aspects of a disease that plagues a large percentage of the population worldwide this volume captures the state of the science of this debilitating disorder facilitating further research and discovery

Biological Rhythms Vinod Kumar, 2002-05-01 Chapters 11 to 14 summarise

important features of the biological clock at the level of whole animal covering all vertebrate classes fish to mammal Chapters 15 and 16 are on long term seasonal rhythms in plants and higher vertebrates Short term rhythms ultradian rhythms the significance of having a clock system in animals living in extreme arctic environments and the diversity of circadian responses to melatonin the key endocrine element involved in regulation of biological rhythms have been discussed in Chapters 17 to 19 Finally a chapter on sensitivity to light of the photoperiodic clock is added which using vertebrate examples illustrates the importance of wavelength and intensity of light on circadian and non circadian functions A well known expert writes each chapter When presenting information the text provides consistent thematic coverage and feeling for the methods of investigation Reference citation within the body of the text adequately reflects the literature as subject is developed A chapter begins with an abstract that enables a reader to know at the first glance the important points covered in that chapter The chapter concludes with a full citation of references included in the text which could be useful for further reading The book ends with a comprehensive subject index that may be useful for quick searches

The Human Nervous System George Paxinos, Juergen K Mai, 2004-01-19 This long awaited update of the classic The Human Nervous System stands as an impressive survey of our knowledge of the brain spinal cord and peripheral nervous system The book has been completely redone and brought up to date An impressive and respected cast of international authors have contributed 37 chapters on topics ranging from Brain Evolution all phases of Brain Development to all areas of the adult brain and peripheral pathways along with careful descriptions of the spinal cord and peripheral nervous system brainstem and cerebellum The Human Nervous System Second Edition will again serve as the gold standard providing a one stop source of up to date information about our knowledge of the human nervous system This second edition of the standard reference on the human nervous system is extensively and completely revised and updated from the 1990 first edition Written by the leading researchers many chapters have been completely rewritten new chapters have been added A new section on Evolution and Development provides a broader perspective and all chapters include references and perspectives to neurological disease

Endocrinology and COVID-19: A Cross-Disciplinary Topic Vera Regitz-Zagrosek, Franck Mauvais-jarvis, Susanna Hofmann, Jeff M. P. Holly, Alexandra Kautzky-Willer, Wei Bao, 2022-09-15

Treatise on Pineal Gland and Melatonin Chandana Haldar, Muniyandi Singaravel, Saumen Kumar Maitra, 2002 This text includes recent literature on pineal research on reproduction melatonin rhythm carbohydrate metabolism and immunity

Melatonin, Neuroprotective Agents and Antidepressant Therapy Francisco López-Muñoz, Venkataramanujam Srinivasan, Domenico de Berardis, Cecilio Álamo, Takahiro A. Kato, 2016-11-16 This work is a guidebook for clinicians who are involved in treating depressive patients and also serves the research scientists who are working on the psychopharmacological mechanisms of antidepressant actions and psychopathological mechanisms underlying mood disorders Mood disorders such as major depressive disorder MDD bipolar disorder BPD and seasonal affective disorder SAD are the most disabling disorders that are

among the most expensive of all medical illnesses The pathophysiology of mood disorders is very complex and involves many mechanisms like circadian rhythm disruption sleep abnormalities melatonin rhythm abnormalities and alterations in melatonin receptor mechanisms abnormalities in monoaminergic neurotransmitter mechanisms glutamatergic release mechanisms hippocampal neurogenesis and abnormal immune and cytokine release mechanisms Many antidepressants that are in clinical use today including the recently introduced novel agents like agomelatine or other antidepressants cause clinical remission by resynchronizing disrupted circadian rhythms and melatonin receptor functions enhancing monoaminergic neurotransmission promoting hippocampal neurogenesis and regulating immune mechanisms This book explains various etiological factors that are involved in the pathogenesis of mood disorders and the mechanisms of therapeutic actions of antidepressants including the recently introduced agomelatine and other antidepressants that exhibit rapid onset of action with greater efficacy and fewer side effects **Hormones** Anthony W. Norman, Gerald

Litwack, 2014-06-28 *Hormones* provides a comprehensive treatment of human hormones viewed in the light of modern theories of hormone action and in the context of current understanding of subcellular and cellular architecture and classical organ physiology The book begins with discussions of the first principles of hormone action and the seven classes of steroid hormones and their chemistry biosynthesis and metabolism These are followed by separate chapters that address either a classical endocrine system e g hypothalamic hormones posterior pituitary hormones anterior pituitary hormones thyroid hormones pancreatic hormones gastrointestinal hormones calcium regulating hormones adrenal corticoids hormones of the adrenal medulla androgens estrogens and progestins and pregnancy and lactation hormones or newer domains of hormone action which are essential to a comprehensive understanding of hormone action including prostaglandins thymus hormones and pineal hormones The book concludes with a presentation of hormones of the future i e cell growth factors This book is intended for use by first year medical students graduate students and advanced undergraduates in the biological sciences It is also hoped that this book will fill the void that exists for resource materials for teaching cellular and molecular endocrinology and that it will be employed as an equal partner with most standard biochemistry textbooks to provide a comprehensive and balanced coverage of this realm of biology *Melatonin after Four Decades* James Olcese, 2006-04-11 In the forty years since melatonin's isolation and characterization a large and multifaceted database has accrued This book documents the diverse research contributions of most of the major laboratories in the field of melatonin research as presented in a special conference to mark the 40 year anniversary of the isolation and chemical identification of this hormone In addition many chapters by younger scientists provide an exciting glimpse of where melatonin research is heading in the future *Quirks of Human Anatomy* Lewis I. Held, 2009-05-29 This book introduces students to basic concepts in evolutionary developmental biology for undergraduate and graduate courses *Power Frequency Electromagnetic Fields, Melatonin and the Risk of Breast Cancer* Anthony Swerdlow, 2006

Pineal Organ Its Hormone Melatonin And The Photoneuroendocrine System: Bestsellers in 2023 The year 2023 has witnessed a remarkable surge in literary brilliance, with numerous engrossing novels enthralling the hearts of readers worldwide. Lets delve into the realm of popular books, exploring the captivating narratives that have captivated audiences this year. Pineal Organ Its Hormone Melatonin And The Photoneuroendocrine System : Colleen Hoover's "It Ends with Us" This heartfelt tale of love, loss, and resilience has captivated readers with its raw and emotional exploration of domestic abuse. Hoover masterfully weaves a story of hope and healing, reminding us that even in the darkest of times, the human spirit can prevail. Pineal Organ Its Hormone Melatonin And The Photoneuroendocrine System : Taylor Jenkins Reids "The Seven Husbands of Evelyn Hugo" This captivating historical fiction novel unravels the life of Evelyn Hugo, a Hollywood icon who defies expectations and societal norms to pursue her dreams. Reids captivating storytelling and compelling characters transport readers to a bygone era, immersing them in a world of glamour, ambition, and self-discovery. Discover the Magic : Delia Owens "Where the Crawdads Sing" This mesmerizing coming-of-age story follows Kya Clark, a young woman who grows up alone in the marshes of North Carolina. Owens crafts a tale of resilience, survival, and the transformative power of nature, captivating readers with its evocative prose and mesmerizing setting. These top-selling novels represent just a fraction of the literary treasures that have emerged in 2023. Whether you seek tales of romance, adventure, or personal growth, the world of literature offers an abundance of captivating stories waiting to be discovered. The novel begins with Richard Pape, a bright but troubled young man, arriving at Hampden College. Richard is immediately drawn to the group of students who call themselves the Classics Club. The club is led by Henry Winter, a brilliant and charismatic young man. Henry is obsessed with Greek mythology and philosophy, and he quickly draws Richard into his world. The other members of the Classics Club are equally as fascinating. Bunny Corcoran is a wealthy and spoiled young man who is always looking for a good time. Charles Tavis is a quiet and reserved young man who is deeply in love with Henry. Camilla Macaulay is a beautiful and intelligent young woman who is drawn to the power and danger of the Classics Club. The students are all deeply in love with Morrow, and they are willing to do anything to please him. Morrow is a complex and mysterious figure, and he seems to be manipulating the students for his own purposes. As the students become more involved with Morrow, they begin to commit increasingly dangerous acts. The Secret History is a brilliant and thrilling novel that will keep you wondering until the very end. The novel is a cautionary tale about the dangers of obsession and the power of evil.

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Pineal Organ Its Hormone Melatonin And The Photoneuroendocrine System Introduction

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