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Plant Hormones Biochemistry and Physiology of Plant Hormones Introduction to the Biochemistry and Physiology of Plant Growth Hormones Biochemistry and Physiology of Plant Hormones Hormones Biochemical Actions of Hormones Plant Hormones and Climate Change Biochemical Actions of Hormones The Hormones V4 Plant Hormone Signal Perception and Transduction Hormones and the Endocrine System Textbook of Energy Balance, Neuropeptide Hormones, and Neuroendocrine Function The Plant Hormone Ethylene Vitamins and Hormones Brassinosteroids Hormonal Regulation of Development I Comprehensive Insect Physiology, Volume 8 Nuclear Receptor Coregulators Brassinosteroids The Islets of Langerhans Hormonal Regulation of Development II Plant Hormones in Crop Improvement Animal Physiology & Biochemistry Hormones and Behaviour in Higher Vertebrates Rhizobiology: Molecular Physiology of Plant Roots Vitamin D Thyroid Hormones Physiology & Biochemistry Of Uterus In Pregnancy & Labor The Role of Peptide Hormones in Insect Physiology, Biochemistry, and Molecular Biology Processes Endocrinology Vitamins and Hormones Hormones of the Limbic System Salicylic Acid: A Multifaceted Hormone The Adrenocortical Hormones Biochemic Physiology and Preventive Medicine Cumulative Subject Index Hormones Currents in Biochemical Research Hormones and Breast Cancer The Receptors

Hormones and Breast Cancer Jul 29 2019 First published in 1943, Vitamins and Hormones is the longest-running serial published by Academic Press. The Editorial Board now reflects expertise in the field of hormone action, vitamin action, X-ray crystal structure, physiology and enzyme mechanisms. Under the capable and qualified editorial leadership of Dr. Gerald Litwack, Vitamins and Hormones continues to publish cutting-edge reviews of interest to endocrinologists, biochemists, nutritionists, pharmacologists, cell biologists and molecular biologists. Others interested in the structure and function of biologically active molecules like hormones and vitamins will, as always, turn to this series for comprehensive reviews by leading contributors to this and related disciplines. This volume focuses on hormones and breast cancer. Contributions from leading authorities Informs and updates on all the latest developments in the field

Currents in Biochemical Research Aug 29 2019 The gene and biochemistry. Viruses. Photosynthesis and the production of organic matter on earth. The bacterial cell. The nutrition and biochemistry of plants. Biological significance of vitamins. Some aspects of vitamin research. Quantitative analysis in biochemistry. Enzymic hydrolysis and synthesis of peptide bonds. Metabolic process patterns. Biochemistry from the standpoint of enzymes. Enzymic mechanisms of carbon dioxide assimilation. Hormones. Fundamentals of oxidation and reduction. Mesomeric concepts in the biological sciences. Viscometry in biochemical investigations. Isotope technique in the study of intermediary metabolism. Mucolytic enzymes. Some aspects of intermediary metabolism. The steroid hormones. Plant hormones and the analysis of growth. Chemical mechanism of nervous action. Some aspects of biochemical antagonism. Chemotherapy: applied cytochemistry. Biochemical aspects of pharmacology. Some biochemical problems posed by a disease of muscle. Physiology and biochemistry. X-ray diffraction and the study of fibrous proteins. Immunochemistry. Social aspects of nutrition. Organization and support of science in the United States.

Rhizobiology: Molecular Physiology of Plant Roots Oct 12 2020 This book discusses the recent advancements in the role of various biomolecules in regulating root growth and development. Rhizobiology is a dynamic sub discipline of plant science which collates investigations from various aspects like physiology, biochemistry, genetic analysis and plant-microbe interactions. The physiology and molecular mechanisms of root development have undergone significant advancements in the last couple of decades. Apart from the already known conventional phytohormones (IAA, GA, cytokinin, ethylene and ABA), certain novel biomolecules have been considered as potential growth regulators or hormones regulating plant growth and development. Root phenotyping and plasticity analysis with respect to the specific functional mutants of each biomolecule shall provide substantial information on the molecular pathways of root signaling. Special emphasis provides insights on the tolerance and modulatory mechanisms of root physiology in response to light burst, ROS generation, agravitrophic response, abiotic stress and biotic interactions.

Plant Hormones and Climate Change Apr 29 2022 This book provides new insights into the mechanisms of plant hormone-mediated growth regulation and stress tolerance covering the most recent biochemical, physiological, genetic, and molecular studies. It also highlights the potential implications of plant hormones in ensuring food security in the face of climate change. Each chapter covers particular abiotic stress (heat stress, cold, drought, flooding, soil acidity, ozone, heavy metals, elevated CO2, acid rain, and photooxidative stress) and the versatile role of plant hormones in stress perception, signal transduction, and subsequent stress tolerance in the context of climate change. Some chapters also discuss hormonal crosstalk or interaction in plant stress adaptation and highlight convergence points of crosstalk between plant hormones and environmental signals such as light, which are considered recent breakthrough studies in plant hormone research. As exogenous application or genetic manipulation of hormones can alter crop yield under favorable and/or unfavorable environmental conditions, the utilization of plant hormones in modern agriculture is of great significance in the context of global climate change. Thus, it is important to further explore how hormone manipulation can secure a good harvest under challenging environmental conditions. This volume is dedicated to Sustainable Development Goals (SDGs) 2 and 13. The volume is suitable for plant science-related courses, such as plant stress physiology, plant growth regulators, and physiology and biochemistry of phytohormones for undergraduate, graduate, and postgraduate students at colleges and universities. The book can be a useful reference for academicians and scientists involved in research related to plant hormones and stress tolerance.

The Islets of Langerhans Mar 17 2021 The Islets of Langerhans: Biochemistry, Physiology, and Pathology reviews the state of knowledge in the complex phenomena involved in the functioning of the multiendocrine organ, the islet of Langerhans, and the various influences that can lead to its abnormal functioning. The volume highlights major gaps in knowledge and indicates the directions for research on the major functioning of this organ and the defects leading to its major pathology, diabetes mellitus. The book is organized into three parts. Part I provides the necessary background information on the nature and development of the islet of Langerhans. It includes studies on the evolution of knowledge of the ever-increasing number of cell types found in islet tissue; and fetal development of the functional capacities of the islet cells. Part II is devoted to the synthesis and secretion of islet hormones, beginning with a chapter on the membrane transport systems of islet tissue as a prelude to subsequent examination of their role in the regulation of these processes. Part III examines the effects of deleterious conditions and agents on the morphology and function of islet cells. This book is intended for researchers in endocrinology, particularly those interested in pancreatic hormones, graduate students in endocrinology, and medical endocrinologists interested in diabetes. It will also be useful to physiologists and biochemists studying peptide synthesis and secretion.

The Receptors Jun 27 2019 The Receptors, Volume IV deals with receptors for intracellular hormones, estrogen, and sex steroids as well as for dopamine, cholecystokinin, and corticotropin. The role of surface recognition receptors in disease is also discussed, along with receptors for plant auxin action and auxin transport. Comprised of 11 chapters, this volume begins with a detailed account of the ?-adrenergic receptor-coupled adenylate cyclase and the reconstitution of the functional interactions of its various purified components. The discussion then turns to the mechanism of action of steroid and thyroid hormones and how abnormalities in their receptors lead to disease; nuclear location of estrogen receptors; and the biochemistry of the fungal sex steroid receptors as well as the use of Achlya as a model system for the study of the mechanism of action of steroid hormones in general. Subsequent chapters focus on dopamine receptors; cholecystokinin receptor; corticotropin receptors; and the search for receptors that mediate sweetness. The book concludes with an analysis of endocrine receptors on lymphocytes and the integration of endocrine and immune systems, with emphasis on large granular lymphocytes. This monograph will be a valuable resource for students and practitioners in fields ranging from cell biology and biochemistry to physiology, endocrinology, and pharmacology.

Hormonal Regulation of Development II Feb 13 2021 This is the second of the set of three volumes in the Encyclopedia of Plant Physiology, New Series, that will cover the area of the hormonal regulation of plant growth and development. The overall plan for the set assumes that this area of plant physiology is sufficiently mature for a review of current knowl edge to be organized in terms of unifying principles and processes. Reviews in the past have generally treated each class of hormone individually, but this set of volumes is subdivided according to the properties common to all classes. Such an organization permits the examination of the hypothesis that differing classes of hormones, acting according to common principles, are determinants of processes and phases in plant development. Also in keeping with this theme, a plant hormone is defined as a compound with the properties held in common by the native members of the recognized classes of hormone. Current knowledge of the hormonal regulation of plant development is grouped so that the three volumes consider advancing levels of organizational complexity, viz: molecular and subcellular; cells, tissues, organs, and the plant as an organized whole; and the plant in relation to its environment.

The Plant Hormone Ethylene Oct 24 2021 The Plant Hormone Ethylene: Stress Acclimation and Agricultural Applications presents current knowledge on our understanding of ethylene reception and signaling, its role in the regulation of plant physiological processes, and its contribution to acclimation in stressful environments. In persistently changing environmental conditions, several stress factors influence cellular metabolism, ultimately causing reduced plant growth and development with a significant loss in agricultural productivity. Sustainable agriculture depends on the acclimation of plant processes to the changing environment through altered physiological and molecular responses, which are controlled by plant hormones, including ethylene. Ethylene, the simplest alkene, is also known as "the volatile hormone," one of the most critical hormones in plants. It is a signaling molecule with the ability to modulate several responses at the molecular level in plants, from various processes related to plant growth and development (from seed germination to senescence), to several responses to changing environmental conditions (including both biotic and abiotic stresses). As a plant hormone involved in several physiological and biochemical processes that are tightly connected with the yield of agriculture crops, ethylene can interact with primary and secondary metabolism of plants affecting both yield and quality. Provides state-of-the art insights into ethylene regulated photosynthesis, growth and productivity in crop plants Presents regulatory mechanisms of ethylene action Assists in developing physio-molecular strategies for augmenting crop performance in changing climates

Vitamins and Hormones Apr 05 2020 First published in 1943, VITAMINS AND HORMONES is the longest-running serial published by Academic Press. In the early days of the Serial, the subjects of vitamins and hormones were quite distinct. The Editorial Board now reflects expertise in the field of hormone action, vitamin action, X-ray crystal structure, physiology, and enzyme mechanisms. Under the capable and qualified editorial leadership of Dr. Gerald Litwack, VITAMINS AND HORMONES continues to publish cutting-edge reviews of interest to endocrinologists, biochemists, nutritionists, pharmacologists, cell biologists, and molecular biologists. Others interested in the structure and function of biologically active molecules like hormones and vitamins will, as always, turn to this series for comprehensive reviews by leading contributors to this and related disciplines. * First published in 1943, Vitamins and Hormones is AP's longest running serial * Each volume contains cutting edge reviews by leading contributors

Hormones and the Endocrine System Dec 26 2021 This book focuses on hormones, and on how they are produced in very diverse regions of the body in humans and animals. But hormones can be found not only in vertebrates, but also in insects, shellfish, spiders, mollusks, even at the origin of metazoan diversification and exhibit the same pathways of synthesis. The book addresses the different classes of hormones: protein/peptides hormones, steroids and juvenile hormones and hormones like catecholamines, thyroid hormones and melatonin. It also discusses the types of hormone receptors, the majority of which are heptahelical G-protein coupled receptors or nuclear receptors. Particular attention is paid to the organs where hormones are created, with specifics on hormonal production and release, while a dedicated chapter details hormonal regulation from very simple to highly complex schemes. The remarkable kinetics of hormones production are also shown, before the book is rounded out by chapters on evolution in the endocrine system, the genetics of endocrine diseases and doping.

Vitamins and Hormones Sep 22 2021 First published in 1943, Vitamins and Hormones is the longest-running serial published by Academic Press. In the early days of the Serial, the subjects of vitamins and hormones were quite distinct. The Editorial Board now reflects expertise in the field of hormone action, vitamin action, X-ray crystal structure, physiology, and enzyme mechanisms. Under the capable and qualified editorial leadership of Dr. Gerald Litwack, Vitamins and Hormones continues to publish cutting-edge reviews of interest to endocrinologists, biochemists, nutritionists, pharmacologists, cell biologists, and molecular biologists. Others interested in the structure and function of biologically active molecules like hormones and vitamins will, as always, turn to this series for comprehensive reviews by leading contributors to this and related disciplines. *First published in 1943, Vitamins and Hormones is AP's longest running serial *Each volume contains cutting edge reviews by leading contributors

Brassinosteroids Apr 17 2021 Plants possess the ability to biosynthesize a large variety of steroids, but it was not until 1979 that a hormonal function was demonstrated in plants. Today, about 40 structurally and functionally related steroids, known as brassinosteroids, have been isolated from natural sources. Brassinosteroids demonstrate various kinds of regulatory activities in the growth and development of plants. This book is based on a 1990 Russian monograph, but includes all important subsequent literature and developments, including unpublished data from the authors' laboratories. Key Features * BRASSINOSTEROIDS: A New Class of Plant Hormones covers: * Structures and classification * Isolation and spectroscopic determination * Biosynthesis and metabolism * Natural product synthesis * Physiological mode of action * Structure-activity relationships * Practical applications in agriculture

Biochemic Physiology and Preventive Medicine Dec 02 2019

Salicylic Acid: A Multifaceted Hormone Feb 02 2020 This book provides an overview of current knowledge, ideas and trends in the field of induced acclimation of plants to environmental challenges. Presenting recent advances in our understanding of the importance of salicylic acid, it paves the way for deciphering the precise role of salicylic acid in the field of plant physiology, biochemistry and agronomy, and breeding stress-tolerant and high-yielding sustainable

transgenic crops. Adopting a mechanistic approach, the book offers valuable information on the role of salicylic acid in combating varied abiotic stresses. Plants are challenged by biotic and abiotic stresses. They adjust to changing environmental conditions by adopting various measures to induce regulatory self-defense pathways in response to different stresses in order to maintain their genetic potential to optimally grow and reproduce. To minimize cellular damage caused by such stresses, phytohormones provide a number of signaling networks involving developmental processes and plant responses to environmental stress. Phytohormones are potential tools for sustainable agriculture in the future. Significant advances have been made in identifying and understanding plant-hormone signaling, especially salicylic acid.

Vitamin D Sep 10 2020 Vitamin D, Volume One: Fourth Edition presents the latest information from international experts in endocrinology, bone biology and human physiology, taking readers through the basic research of vitamin D. This impressive reference presents a comprehensive review of the multifaceted vitamin D. Researchers from all areas will gain insight into how clinical observations and practices can feed back into the research cycle, thus allowing them to develop more targeted genomic and proteomic insights on the mechanisms of disease. Offers a comprehensive reference, ranging from basic bone biology, to biochemistry, to the clinical diagnostic and management implications of vitamin D Saves researchers and clinicians time in quickly accessing the very latest details on the diverse scientific and clinical aspects of Vitamin D, as opposed to searching through thousands of journal articles Targets chemistry, metabolism and circulation, mechanisms of action, mineral and bone homeostasis, human physiology, diagnosis and management, nutrition, sunlight, genetics and vitamin D deficiency Volume II of this collection presents a clinical focus on disorders, analogs, cancer; immunity, inflammation and disease and therapeutic applications

Hormones and Behaviour in Higher Vertebrates Nov 12 2020

Hormones of the Limbic System Mar 05 2020 First published in 1943, Vitamins and Hormones is the longest-running serial published by Academic Press. The Editorial Board now reflects expertise in the field of hormone action, vitamin action, X-ray crystal structure, physiology and enzyme mechanisms. Under the capable and qualified editorial leadership of Dr. Gerald Litwack, Vitamins and Hormones continues to publish cutting-edge reviews of interest to endocrinologists, biochemists, nutritionists, pharmacologists, cell biologists and molecular biologists. Others interested in the structure and function of biologically active molecules like hormones and vitamins will, as always, turn to this series for comprehensive reviews by leading contributors to this and related disciplines. This volume focuses on vitamins and the immune system. *Longest running series published by Academic Press *Contributions by leading international authorities

Endocrinology May 07 2020 INTRODUCTION HYPOTHALAMUS AND PITUITARY GLAND THYROID AND PARATHYROID GLANDS ADRENAL GLAND ENDOCRINE PANCREAS GASTROINTESTINAL HORMONES THE PINEAL BODY HORMONES AND REPRODUCTION FEEDBACK CONTROL OF HORMONE PRODUCTION HORMONES AS PHARMACEUTICALS Review Questions Glossary Suggested Readings Index

The Adrenocortical Hormones Jan 03 2020

Introduction to the Biochemistry and Physiology of Plant Growth Hormones Sep 03 2022 The nature of plant growth hormones; Growth hormones in shoot and root development; Growth hormones in phototropism and geotropism; Hormones and reproduction in higher plants; Growth hormones and phase change in plants; The mechanism of action of plant growth hormones.

Physiology & Biochemistry Of Uterus In Pregnancy & Labor Jul 09 2020 First Published in 1986, this book offers a full, comprehensive guide to the uterus and how it’s affected by pregnancy and childbirth. Carefully compiled and filled with a vast repertoire of notes, diagrams, and references this book serves as a useful reference for students of medicine, and other practitioners in their respective fields.

Brassinosteroids Aug 22 2021 Brassinosteroids are plant-growth-promoting natural products similar in structure to animal and insect steroid hormones. Considered a new class of plant hormone, along with auxins, gibberellins, cytokinins, abscisic acid, and ethylene, brassinosteroids are present throughout the plant kingdom. They show distinct physiological effects on plant growth including improvement of stress tolerance in crop production. These discoveries, together with advances in molecular and biosynthetic studies of brassinosteroids, open new aspects of research in understanding the growth and development of plants. This book presents a comprehensive view of the related chemistry, biochemistry, physiology, agricultural applications, and most recent research in molecular biology. Written by scientists who are active in these fields, Brassinosteroids is a vital source of information for plant and agricultural science researchers with an interest in plant hormones.

Plant Hormones Nov 05 2022 Plant hormones play a crucial role in controlling the way in which plants grow and develop. While metabolism provides the power and building blocks for plant life, it is the hormones that regulate the speed of growth of the individual parts and integrate them to produce the form that we recognize as a plant. In addition, hormones play a governing role in the process of reproduction. This book is a description of these natural chemicals: how they are synthesized and metabolized, how they act at both the organismal and molecular levels, how we measure them, and a description of some of the roles they play in regulating plant growth and development. This is the second edition of the highly acclaimed monograph published in 1987 under the title Plant Hormones and their Role in Plant Growth and Development. All chapters have been rewritten to include the latest information on plant hormones, and several totally new chapters have been included, particularly with reference to the molecular biology of plant hormones. The book is a selected collection of newly written, carefully integrated and illustrated reviews describing our knowledge of plant hormones and the experimental work that is the foundation of this information. It is directed at advanced students and professionals in the plant sciences: botanists, biochemists and molecular biologists; and those involved with the horticultural, agricultural and forestry sciences. It can serve as a text and guide for graduate level courses on plant hormones or plant growth and development, and as a supplement to courses on plant or comparative development. Scientists in other disciplines who wish to learn more about hormones and their role in plant development will also find this text of value.

Cumulative Subject Index Oct 31 2019 First published in 1943, Vitamins and Hormones is the longest-running serial published by Academic Press. In the early days of the Serial, the subjects of vitamins and hormones were quite distinct. Now, new discoveries have proved that several of the vitamins function as hormones and many of the substances inferred by the title of the Serial function in signal transduction processes. Accordingly, the Editor-in-Chief has expanded the scope of the serial to reflect this newer understanding of function-structure relationships in cellular communication. The Editorial Board now reflects expertise in the field of hormone action, vitamin action, X-ray crystal structure, physiology, and enzyme mechanisms. Under the capable and qualified editorial leadership of Dr. Gerald Litwack, Vitamins and Hormones continues to publish cutting-edge reviews of interest to endocrinologists, biochemists, nutritionists, pharmacologists, cell biologists, and molecular biologists. The 56th volume of Vitamins and Hormones is a cumulative index of volumes 30 through 55.

The Hormones V4 Feb 25 2022 The Hormones: Physiology, Chemistry and Applications, Volume IV covers the advances in understanding the nature and function of plant and non-mammalian animal hormones. This volume is divided into 11 chapters, and begins with an examination of the major characteristics of auxins, including the diversity of its action,

chemical control, and systematic patterns. The subsequent chapters explore the chemistry and physiology of neurohormones and their role in insect growth. A chapter highlights the control of color of hormones and the actions of 5-hydroxytryptamine. The remaining chapters are devoted to the occurrence, physiological role, biochemistry, mode of action, metabolism, and biosynthesis of other hormones, such as gastrointestinal hormones, catecholamines, insulin, and glucagon. These chapters deal also with the general principles and application of immunoassay of protein hormones. Endocrinologists, physiologists, biochemists, and hormone researchers will find this book invaluable.

Animal Physiology & Biochemistry Dec 14 2020 The book is written in simple lucid language and easy to understand style. * Subject matter has been fully revised in such a way that makes the scientific concepts clear and understandeable. * This edition comprises new and freshly added illustrations so that the reader may not have to refer books on cell biology. * Meets well the curricula requirements of undergraduate students of Indian Universities.

Comprehensive Insect Physiology, Volume 8 Jun 19 2021 Endocrinology II concerns the actions of hormones in insects, complementing Volume 7 which is concerned with the production and chemistry of insect hormones. While the preceding volume is directed mainly towards the insect endocrinologist, this volume has much of intrinsic interest to the general physiologist. It deals with the regulation of metabolism, reproduction, cuticle properties, and certain aspects of behaviour from a systems point of view and amply documents how hormones have provided basic insights into the functioning of such systems. Interference in endocrine regulation could provide future systems for insect control and this volume will provide the foundation on which the future formulation of these strategies is based. More information on diverse aspects of insect hormone action is brought together here than in any previous single work and this volume will therefore be a valuable reference source for many years to come.

Nuclear Receptor Coregulators May 19 2021 First published in 1943, Vitamins and Hormones is the longest-running serial published by Academic Press. In the early days of the Serial, the subjects of vitamins and hormones were quite distinct. The Editorial Board now reflects expertise in the field of hormone action, vitamin action, X-ray crystal structure, physiology, and enzyme mechanisms. Under the capable and qualified editorial leadership of Dr. Gerald Litwack, Vitamins and Hormones continues to publish cutting-edge reviews of interest to endocrinologists, biochemists, nutritionists, pharmacologists, cell biologists, and molecular biologists. Others interested in the structure and function of biologically active molecules like hormones and vitamins will, as always, turn to this series for comprehensive reviews by leading contributors to this and related disciplines. *First published in 1943, Vitamins and Hormones is AP's longest running serial *Each volume contains cutting edge reviews by leading contributors

The Role of Peptide Hormones in Insect Physiology, Biochemistry, and Molecular Biology Processes Jun 07 2020

Biochemical Actions of Hormones Mar 29 2022 Biochemical Actions of Hormones, Volume VI is a 10-chapter text that summarizes the regulation of protein kinases and phosphoprotein phosphatases and the relationship of the endocrines to cancer. This volume describes first the precise structures of steroid hormones and carcinogens. The subsequent chapters cover the hormonal regulation of chemical carcinogenesis; the importance of steroid hormones as growth factors for mammary tumors; the effects of steroid hormones in the central nervous system; and the properties of the purified estrogen receptor. A chapter highlights the biochemical actions of neurohypophysial hormones and neurophysin. Another chapter presents the biochemistry and physiology of cytokinin, a plant hormone. The final chapter exemplifies the multihormonal systems by control of the ?2u-globulin produced in the liver. This book will be of great value to endocrinologists.

Textbook of Energy Balance, Neuropeptide Hormones, and Neuroendocrine Function Nov 24 2021 This textbook presents for the first time a comprehensive body of the latest knowledge in the field of neuropeptides and their action on energy balance. It contains a detailed and comprehensive account of the specific hypothalamic peptides in regards to their roles in energy balance, food intake control and co-morbidities, to better understand the patho-physiology of obesity. The textbook includes an examination the history of the evolution of human society from a thin to the obese phenotype and, within that context, how modern society habits and industrial food production did not respect the evolutionary trait resulting in changes in the energy balance set point. It provides a novel conceptualization of the problem of obesity when considering the biochemistry of peptide hormones and entertaining novel ideas on multiple approaches to the problems of energy balance, as well as demonstrates and explains why alterations in pro-hormone processing are paramount to understand metabolic disease. This text is excellent material for teaching graduate and medical school courses, as well as a valuable resource for researchers in biochemistry, cell, and molecular biology, neuroscientists, physician endocrinologists, and nutritionists.

Biochemical Actions of Hormones May 31 2022 Biochemical Actions of Hormones, Volume I explores the significant developments toward understanding the primary effects of hormones in cellular receptors at the molecular level. This book is composed of 12 chapters that survey the molecular and biochemical approaches bearing on the problem of hormone mechanism. The opening chapters discuss the thyroid hormonal responses during metamorphic process in Amphibia; the primary role of hormones in biochemical differentiation; the influence of hormones on protein synthesis and the importance of protein synthesis mechanism; and the biochemical rhythms within the pineal gland and the rhythm in hepatic tyrosine transaminase activity. The subsequent chapters examine the effects of a number of hormones on transport systems in the cell membranes, the protein interaction with steroids, and the influence of insulin on protein and nucleic acid metabolism. The remaining five chapters deal with the physiology, mechanism of action, and biological effects of various hormones, such as mineralocorticoids, parathyroid hormone, calcitonin, thyrotropin, and plant hormones. This book is an invaluable source for endocrinologists.

Thyroid Hormones Aug 10 2020 Western knowledge of progress in biomedical research in Russia is severely limited by the scarcity of Russian journals available to us as well as the fact that few of us can read Russian. Therefore, it is of special significance that this recent contribution to the Russian scientific literature has been trans lated into English. This publication, Thyroid Hormones, brings to us a detailed analysis of recent work in Russia, and in particular in the Laboratory of Hormone Biochemistry, Institute of Biochemistry, Academy of Science of the Uzbek SSR and the Laboratory of Pathological Physiology, Institute of Experi mental Endocrinology and Hormone Chemistry, Academy Medical of Science of the USSR. The review illustrates the parallel pathways of inves tigation taken by investigators in Russia and in the West, indicating where the results have complemented each other or stimulated new questions and approaches. Consequently, the book provides an excellent review of the contributions made by Russian scientists in thyroid research and couples it with Western thought on these subjects to produce a complete review of the thyroid hormones. The large amount of data provided and the inclusion of multiple view points toward specific problems provides an excellent survey of the mecha nisms of biosynthesis and control of hormone formation, physiological effects of the hormones, and the molecular mechanisms involved in thyroid hormone action.

Biochemistry and Physiology of Plant Hormones Aug 02 2022 Biochemistry and Physiology of Plant Hormones is intended primarily as a textbook or major reference for a one-term ;intermediate-level or ad vanced course dealing with hormonal regulation of growth and develop ment of seed plants for students majoring in biology, botany, and applied botany fields such as agronomy, forestry, and horticulture. Additionally, it should be useful to others who wish to become familiar with the topic in relation to their principal student or professional interests in related fields. It is assumed that

readers will have a background in fundamental biology, plant physiology, and biochemistry. The dominant objective of Biochemistry and Physiology of Plant Hor mones is to summarize, in a reasonably balanced and comprehensive way, the current state of our fundamental knowledge regarding the major kinds of hormones and the phytochrome pigment system. Written pri marily for students rather than researchers, the book is purposely brief. Biochemical aspects have been given priority intentionally, somewhat at the expense of physiological considerations. There are extensive citations ofthe literature-both old and recent-but, it is hoped, not so much docu mentation as to make the book difficult to read. The specific choices of publications to cite and illustrations to present were made for different reasons, often to illustrate historical development, sometimes to illustrate ideas that later proved invalid, occasionally to exemplify conflicting hy potheses, and most often to illustrate the current state of our knowledge about hormonal phenomena.

Plant Hormones in Crop Improvement Jan 15 2021 Plant Hormones in Crop Improvement examines the signaling pathways and mechanisms associated with phytohormones, with a particular focus on stress resilience. The book highlights genomic and proteomic approaches to manipulating phytohormone responses. The world's growing population and unpredictable climate puts pressure on the agriculture industry, so understanding strategies for crop improvement is essential. Beginning with the chemistry, structure and biosynthesis pathways of phytohormones, subsequent chapters review the various roles of phytohormones including Plant and growth development, Plant response to drought, salinity and hypoxia, and Plant pathogen interaction and immunity. This book is an essential read for students, researchers and agriculturalists interested in plant physiology, plant genetics and crop yield improvement. Provides a comprehensive review of phytohormone pathways and mechanisms in relation to stress tolerance Highlights the regulatory roles of phytohormones Reviews genome editing and metabolomics approaches

Hormonal Regulation of Development I Jul 21 2021 This is the first of the set of three volumes in the Encyclopedia of Plant Physiology, New Series, that will cover the area of the hormonal regulation of plant growth and development. The overall plan for the set assumes that this area of plant physiology is sufficiently mature for a review of current knowledge to be organized in terms of unifying principles and processes. Reviews in the past have generally treated each class of hormone individually, but this set of volumes is subdivided according to the properties common to all classes. Such an organization permits the examination of the hypothesis that differing classes of hormones, acting according to common principles, are determinants of processes and phases in plant development. Also in keeping with this theme, a plant hormone is defined as a compound with the properties held in common by the native members of the recognized classes of hormone. Current knowledge of the hormonal regulation of plant development is grouped so that the three volumes consider advancing levels of organizational complexity, viz: molecular and subcellular; cells, tissues, organs, and the plant as an organized whole; and the plant in relation to its environment. The present volume treats the molecular and subcellular aspects of hormones and the processes they regulate. Although it deals with chemically distinct classes of hormone, this volume stresses properties and modes of studying them, that are common to all classes.

Hormones Sep 30 2019 Endocrinology is a field in which enormous advances have been made in the last decade; the rate of discovery of new hormones, hormone-like molecules, receptors, and mechanisms of action is continually advancing. The development of techniques in immunology and molecular biology has led to the possibility of describing in detail the gene structure of many of the compounds involved in hormonal systems. Remarkable homology has been shown between oncogene products and various components of the endocrine network, leading to the asser tion that deregulation of hormonal function is involved in the generation and/or development of cancer. We now know that the central nervous system is both a target and a production site of many hormonal products, and that hormones, neurotransmitters, growth factors and immunopeptides all act through similar mechanisms. The only second messenger known ten years ago was cAMP; today calcium, derivatives of membrane phospholipids, and protein kinases are also known to be mediators of hormone action. The very concept of hormonal systems has been expanded to include not only endocrine secretions but also para- and autohormones and their mechanisms of action; an understanding of their functions will be central to the immediate future of medicine. The discovery of hormonal molecules and endocrine interactions and the subsequent understanding of hormone related pathophysiology has led to the development of new strategies in medical treatment such as fertility control and the management of diabetes.

Biochemistry and Physiology of Plant Hormones Oct 04 2022 The second edition of Biochemistry and Physiology of Plant Hormones has been substantially improved, not only has every chapter been revised and updated, but a new chapter on brassinosteriods has been added. This richly illustrated textbook is intended primarily for intermediate-level and advanced courses concerned with hormonal regulation of growth and development of seed plants including the hormonal regulation of flowering as well as the role of the phytochrome pigment system in the regulation of growth and development generally. There are frequent citations of the literature in the text and an even more extensive list of references at the end of each chapter, which will serve as an introduction to the voluminous historical and contemporary literature on each topic.

Plant Hormone Signal Perception and Transduction Jan 27 2022 Studies of the perception and transduction of hormonal signals in higher plants are relatively recent. Despite the rather small number of researchers involved in comparison, say, to those studying signalling in animals, plant scientists are becoming attracted to this important field because of the fascinating mechanisms being revealed and the recognition that any hope of understanding the ways in which the growth and development of the whole plant are controlled can only be based on an exploration of the physiology, biochemistry and molecular biology of these mechanisms. The Moscow symposium that gave rise to the present book drew many of the most active workers in the area, and many new developments were revealed. Audience: Important reading for all those interested in plant growth and development.

Hormones Jul 01 2022 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.