Indian Journal of Biochemistry & Biophysics

Translational Research

Biochemical Actions of Hormones

Biochemistry of Vitamin A

The transition from the quarterly Sub-Cellular Biochemistry to the annual SUBCELLULAR BIOCHEMISTRY is a good opportunity to restate the aims and scope of this publication. They were originally given (in Volume 1 No. 1) as follows: This review and essay journal . . . brings together work on a wide range of topics in sub-cellular biochemistry in the hope of stimulating progress towards an integrated view of the cell. It deals with the biochemistry and general biology of nuclei, mitochondria, lysosomes, peroxisomes, chloroplasts, cell membranes, ribosomes, cell sap, flagellae and other specialized cell components. In addition to articles dealing with conventional biochemical studies on sub-cellular structures, the journal publishes articles on the genetics, evolution and biogenesis of cell organelles, bioenergetics, membrane behaviour and the interaction between cell structures, particularly between nucleus and cytoplasm. The first four volumes (in the quarterly format) fulfilled many, but not all, of these stated aims, and it is hoped that further articles in the new annual series will soon fill any deficiencies in the range of topics covered. Over the years we have intentionally not interpreted the title of the publication in a too literal sense. Although we have included specific articles on individual subcellular fractions (and certainly hope to do so again) the publication is definitely not only concerned with studies on the biochemistry of isolated cell fractions. The primary target is the “integrated view of the cell.”

Metabolic Pathways

From Physiology and Chemistry to Biochemistry

From Physiology and Chemistry to Biochemistry features ten prominent scientists offering perspectives and insights from the fields of physiology, plant biology, microbiology, genetics, biophysics, molecular biology, immunology and biotechnology to answer questions with regard to India. They examine major discoveries, developments and research that shaped the direction of the discipline along with the research groups and institutions involved. Issues such as ethical implications of new developments in biotechnology, and practical applications of research in agriculture, medicine, forensics, industry are discussed.

New Grants and Awards
Contributed research papers presented in two symposiums; one named Symposium on “History of Biochemistry and Molecular Biology in India” dedicated to the 80th birthday of Prof. Sushil Kumar Mukherjee on 8th Feb., 1993, held at Varanasi, India.

Diabetes Literature Index

Indian Journal of Experimental Biology

The Fourth Edition of the compendium pools together the knowledge and experience of experts from all over the world, who are engaged in teaching and research in the field of biochemistry, medical sciences and allied disciplines. Comprising 20 sections, the present edition of the book has been substantially revised incorporating the latest research and achievements in the field. Beginning appropriately with chemical architecture of the living systems, role and significance of biochemical reactions, organization of specialised tissues, and importance of food and nutrition, the book explores beyond traditional boundaries of biochemistry. The knowledge of various organ systems has been expanded covering their normal function, ailments and dysfunction. A chapter on Eye and Vision explaining molecular basis of cataract and glaucoma have been added. Also, the book introduces stem cells and regenerative therapy and defines molecules associated with pleasure, happiness, stress and anxiety. A section on Gastrointestinal and Biliary System elaborates on physiology and dysfunction including fatty liver and its implications, and hepatitis viruses. The knowledge of Human Genetics and Biochemical Basis of Inheritance has been appropriately expanded to reflect the latest advances in various domains. Besides DNA fingerprinting for identity establishment, the section discusses epigenetics, micro-RNA and siRNA including their role in gene expression, chromatin modification and its association with human diseases, and genetic engineering. It also explores emerging areas such as metabolomics and proteomics; synthetic biology; and dual use technology in bioterrorism. Due emphasis has been given to the section on Cell Replication and Cancer. Emergence of the use of probiotics in human health has also been highlighted. Besides, an entire section has been devoted to male and female reproductive systems, fertilization, implantation, pregnancy, lactation, and assisted reproductive technology. Immunology, including vaccines and immunization, has been given due attention with latest updates in this fast growing area. Modern medicine, despite its stupendous advances cannot provide care for all ailments. Thus, the new edition provides knowledge of alternative medicine systems—Ayurveda, Homeopathy, Unani, Yoga and Herbal Medicine. Incorporating vast information on the latest and emerging areas, the book will be of immense value to the students of medical sciences not only in their preclinical years, but also in all phases of medical course including postgraduate education and practice. Besides, it will also serve as a valuable source to the students of biochemistry and human bi

Metabolic Inhibitors V4

Recent Progress in Hormone Research, Volume 31 covers the proceedings of the 1974 Laurentian Hormone Conference held in Mount Tremblant, Quebec, Canada, on August 25-30, 1974. The book discusses the relationship between catecholamines and other hormones; the hormone receptor complexes and their modulation of membrane function; and receptors for insulin, NSILA-s, and growth hormone. The text also describes the mechanism of action of pituitary growth hormone; hormonal regulation of ovalbumin synthesis in the chick oviduct; and studies on the hepatic glucocorticoid receptor and on the hormonal modulation of specific mRNA levels during enzyme induction. The endocrine neurons; the formation of estrogens by central neuroendocrine tissues; and the operating characteristics of the hypothalamic-pituitary system during the menstrual cycle and observations of the actions of somatostatin are also considered. The book further tackles somatostatin; the relationship of sleep and sleep stages to neuroendocrine secretion and biological rhythms in human; and the genetic approaches to the study of the regulation and actions of vasopressin. The identification and actions of gastric inhibitory polypeptide; the studies on the pathogenesis of Graves’ ophthalmopathy, and qualitative and quantitative gonadal-pituitary feedback is also looked into.

Recent Progress in Hormone Research

Since its inception in 1945, this serial has provided critical and integrating articles written by research specialists that integrate industrial, analytical, and technological aspects of biochemistry, organic chemistry, and instrumentation methodology in the study of carbohydrates. The articles provide a definitive interpretation of the current status and future trends in carbohydrate chemistry and biochemistry. Features contributions from leading authorities and industry experts Informs and updates on all the latest developments in the field

Critical Reviews in Tropical Medicine

Biochemistry of Brain

This book is based on the proceedings of a symposium organized on the occasion of the 80th birthday of Professor G.P. Talwar jointly by the National Institute of Immunology, New Delhi and the All India Institute of Medical Sciences, New Delhi

Advances in Carbohydrate Chemistry and Biochemistry
Can we cherish the environment, and rights, too? When eco-activists get the upper hand, strange things can happen - especially if government or corporate interests are behind them. Studies a wide range of specific cases and the politics, tactics, social,
From Physiology and Chemistry to Biochemistry

Metabolic Pathways, Third Edition: Volume IV: Nucleic Acids, Protein Synthesis, and Coenzymes focuses on the metabolic pathways of the major biological constituents of living organisms, namely, nucleic acids, proteins, and coenzymes. The biosynthesis and metabolism of purines and pyrimidines, nucleotides, riboflavin and related compounds, and vitamin B6 are discussed. The biogenesis and metabolism of thiamine and folic acid are also considered. This volume is comprised of seven chapters and begins with an analysis of metabolic control and enzymology of purines and pyrimidines such as inosinic acid and nucleotides. The next chapter is devoted to the biosynthesis and metabolism of nucleotides and nucleic acids, making reference to deoxyribonucleotides as well as RNA and DNA. Some of the reactions involving nucleotides are classified and briefly discussed. The reader is then introduced to protein synthesis, paying particular attention to the chemical features of the synthesis of the peptide bond and the characteristics of the genetic code implicated in this process. The remaining chapters focus on riboflavin and related compounds, thiamine, folic acid, and vitamin B6. This book will be a useful resource for biochemists and biologists.

Control Mechanisms in the Nervous System

Biochemistry Abstracts

Textbook of Biochemistry and Human Biology

Metabolic Inhibitors: A Comprehensive Treatise, Volume IV reviews developments in studies of inhibition of metabolic and enzymic processes ranging from photosynthesis and blood clotting to protein synthesis, fatty acid metabolism, and phospholipid metabolism. The book also explores the inhibition of specific enzyme reactions, such as amino acid activation, amino acid hydroxylation, and cyclic AMP formation. Organized into nine chapters, this volume begins with an overview of allosteric inhibition and inhibitors, and then discusses amino acid hydroxylase inhibitors. The reader is also introduced to inhibitors and activators of enzymes that regulate the cellular concentration of cyclic AMP. In particular, the book describes the role of lipids in the activation of adeny1 cyclase by hormones; modification of adeny1 cyclase in various physiological and pathological conditions; and synthesis of glycerophosphatides as well as phospho- and glycosphingolipids. This book is a valuable source of information for biochemists and medical research workers as well as virologists, microbiologists, plant physiologists, and agronomists.

Subcellular Biochemistry

Comprehensive Biochemistry

Textbook of biochemistry and human biology

Indian Journal of Biochemistry

Journal of Scientific & Industrial Research

Hormonal Steroids contains the plenary and symposium lectures delivered to the Fifth International Congress on Hormonal Steroids held at New Delhi on October 30 to November 4, 1978. The plenary lectures include biochemical actions of trophic hormones and steroids on steroid production and spermatogenesis in testes; chemical reactions of steroids which imitate the selectivity of enzymatic transformations; and human chorionic gonadotrophin and ovarian and placental steroidogenesis. Symposia papers comprise of water-soluble steroidal anesthetics; quality control of radioimmunoassay of hormones in reproductive physiology; automation of steroid radioimmunoassay for clinical and research purposes; non-radioisotopic homogeneous steroid immunoassays; mechanisms involved in the regulation of steroid receptor levels; and metabolic effects of corticosteroid therapy in post-menopausal women.

Synthetic Peptides as Antigens

The explosive accumulation of new knowledge in the biological sciences in the last decades has advanced our understanding of the basic mechanisms that underlie most biological phenomena. These advances, however, have not been uniform but have varied considerably among the different biological problems. In some cases, e.g., biochemical genetics, radical advances have been made...
which have changed our ideas and our approaches. In other cases, even with work which has yielded much detailed new knowledge, our understanding of basic mechanisms remains very inadequate. Among the lines of work that have not yet led to dramatic conceptual advances is the problem of control of biological activities. This problem is, of course, basic both to any full understanding of life as a whole, and to any real understanding of its most minute phenomena. Indeed, the myriad of biological activities that we can observe by direct or indirect means are all under the sway of most exquisitely precise mechanisms. Any malfunctioning of these mechanisms has serious consequences, not only for the particular function itself, but for all the related and interlinked activities.

Environmental Mafia

The Novartis Foundation Series is a popular collection of the proceedings from Novartis Foundation Symposia, in which groups of leading scientists from a range of topics across biology, chemistry and medicine assembled to present papers and discuss results. The Novartis Foundation, originally known as the Ciba Foundation, is well known to scientists and clinicians around the world.

Regulation of Gene Expression in Eukaryotic Cells

A Status Study on Population Research in India: Talwar, G. P. Biomedical aspects

Chorionic Gonadotropin

Biochemistry of Brain is a collection of articles dealing with the developments in the biochemistry of the brain. This book gives a comprehensive and critical discussion of important developments in studies concerning the above subject. This text discusses the structure, function, and metabolism of glycosphingolipids, which are related to the study of sphingolipid storage diseases. Inborn defects of metabolism are found in Gaucher's and Fabry's disease, which are characterized by lipid accumulation in the brain. Another paper reviews the chemical and genetics of critically lysosomal hydrolase deficiencies that can cause the storage of sphingolipids. This book then explains the role of myelin basic protein in lipids in vivo that the weak bonding of the protein is not a major component of myelin stability. Another paper discusses the procedures for isolating subfractions of myelin and myelin-related membranes, with some attention given on the alterations in the subfractionation of myelin in pathological hypomyelinating and demyelinating conditions. Another article discusses the biochemical and enzymatic composition of lysosomes and the biosynthesis, intracellular transport, storage, and the degradation of lysosomal constituents. This collection of papers will benefit scientists doing research in microbiology, microchemistry, molecular genetics, and neurochemistry.

Indian Journal of Biochemistry and Biophysics

Life, either as we think of it in the abstract in its highest sense, or life, as we think of it in terms of a compact living organism, is obviously the result of complex interaction of all of the components of the organism. One could therefore question the advisability of separating out the nervous system for a special detailed study in our age of overspecialization. The main purpose of the present Handbook is not to fragment further our approach or understanding of living phenomena, but, on the contrary, to try to summarize and integrate as much of the available information and thinking on the nervous system as is possible in a limited space. It is difficult to think of an area of modern biology that is more exciting to study and that has greater importance for mankind, from any point of view, than the study of the brain and of the nervous system. The influence that understanding of brain function in biological terms can exert on our future is not generally understood in its full impact. Although our ignorance about even the most basic mechanisms in the nervous system is enormous, in recent years our knowledge has made most important advances, and as a consequence great masses of data have been accumulated.

History of Development of Biochemistry and Molecular Biology in India

This volume is devoted to the chemistry, immunology, molecular biology, and physiology of the human chorionic gonadotropin, hCG. For this glycoprotein molecule the course from discovery to chemical deciphering covered about fifty years. It was in 1928 that Ascheim and Zondek reported that urine from pregnant women contains something that stimulates the ovaries of mice or rats. This provided the basis for the famous A-Z test for pregnancy and for the "rabbit test" modification introduced by Friedman. As researchers sought to find more sensitive responses to hCG, they used a wide variety of species including the South African aquatic toad, Xenopus Zaevis, the terrestrial toad of South America, Bufo arinarus, and the African weaver finch, Eupzeetes afra. The weaver finch feather reaction was particularly noteworthy, for it disclosed a non-gonadal response to hG/LH. In retrospect, this may have been an important evolutionary clue to the realization that the designation of the hormone as a "gonadotropin" may have been only partially descriptive of the molecule's physiological function—a concept that is gaining attention, as the papers in this 1980 volume divulge.
New information is developing so rapidly in the entire field of immunology that one is unable to remain abreast of all advancing fronts. In many cases, considerable information has accumulated as the result of the efforts of many investigators, but the conclusions from the various laboratories have not been summarized recently in a comprehensible manner. One such situation has to do with work on IgD. An up-to-date report on this immunoglobulin was included in Volume 10 of this series, but since that time there has been considerable progress in the determination of its structure and function. In the present volume Leslie and Martin have reviewed the accomplishments of recent years and the problems remaining to be solved. New information regarding the concentration of IgD in body fluids in normal and disease states is presented. Studies of the ontogeny of surface IgD in animals are described, and the findings imply that it may be important in the primary immune response. The role of IgD on lymphocyte surfaces is thoroughly discussed especially in terms of stimulating or suppressive combinations of signals delivered to the lymphocyte by agents which bind or alter the surface receptors. The authors conclude by proposing a model for plasma-cell differentiation which accounts for the existence of triple Ig-bearing cells, many IgM-IgD-bearing cells, and the low percentage of cells bearing a single isotype. Sometimes the serum of an individual contains abnormally large amounts of two distinct, homogeneous populations of immunoglobulins.

TEXTBOOK OF BIOCHEMISTRY, BIOTECHNOLOGY, ALLIED AND MOLECULAR MEDICINE

The main emphasis of this text is on the biochemistry, metabolism and systemic mode of action of vitamin A. The physiological, biochemical and nutritional aspects of naturally occurring retinoids are clearly addressed. Chapters review biogenesis, absorption, storage, transport, and metabolic transformations of vitamin A. Further discussion includes vision and bacteriorhodopsin, vitamin A deficiency and hypervitaminosis A, and the vitamin A in prevention and cure of cancer.

Chemical Architecture of the Nervous System

At the present time there are renewed global efforts to control the major tropical infections and to stem the tide of malnutrition, the two serious, often intertwined, problems that contribute to much of the morbidity and mortality in underprivileged populations. Many international organizations have joined hands with national governments and with the private sector to search for new approaches to problems that beset much of the developing world, including countries in the tropical region. This volume continues the tradition of the previous publication in the Series. A variety of fare is offered to readers: explanations of the activities and achievements of the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases; and studies of infant mortality, schistosomiasis, trypanosomiasis, helminths, lactase deficiency, oral rehydration therapy, functional consequences of iron deficiency, and fertility control. An authoritative state-of-the-art reviews provide a critical analysis of recent data. I hope the Series will continue to prove useful to all those working in the tropics and to those in the industrialized countries whose awareness of physical health problems of the Third World is relatively limited. R. K. Chandra St. John's, Newfoundland VII Contents Chapter 1. The Special Programme for Research and Training in Tropical Diseases .................. DAVID S. ROWE 1. Origins, Objectives, and Diseases .................. 1 2. The Modus Operandi of the Programme .................. 3 2. 1. Scientific Working Groups .................. 3 2. 2. Research Strengthening Group .................. 7 2. 3. The Scientific and Technical Advisory Committee .................. 7 2. 4. Joint Coordinating Board ..................