
Biology Indian Institute Of Science

Meiosis in Development and Disease
Mycobacterium Tuberculosis: Molecular Infection
Biology, Pathogenesis, Diagnostics and New
Interventions
Unravelling Cancer Signaling Pathways: A
Multidisciplinary Approach
Droplets of Life
New Frontiers and Applications of Synthetic
Biology
Plant Receptor-Like Kinases
Sirtuin Biology in Medicine
Extremozymes and their Industrial Applications
Biomedical Product and Materials Evaluation
Advances in Cyanobacterial Biology
Membrane Proteins
The Year Book of the Indian National Science
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Pandemic Outbreaks in the 21st Century
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Fungi
Integrated Methods in Protein Biochemistry: Part
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Meiosis in Development and Disease

Academic
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Mammalian
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fields, this
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developments
in genomics of
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action and
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book begins
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dimorphism in
the central
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system;
structure,
control of
secretion and
function of
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gonadotropins
of pituitary
origin and
their role in
gonadal
functions. This
is followed by

an account of
hormonal
regulation of
spermatogene
sis, and the
role of
apoptosis in
this process.
Subsequent
chapters
center around
epididymis,
regulation of
growth and
function, and
sperm motility
regulation.
The last
chapters in
the book
discuss the
structure and
function of
male
accessory sex
glands with
associated
pathologies as
well as recent
updates in
male
contraception,

mechanism of androgen action, and genomics of male infertility. Wherever necessary, tables and figures have been added for a better understanding. Each chapter is appropriately referenced and contains current information on the latest developments in the field. *Mycobacterium Tuberculosis: Molecular Infection Biology, Pathogenesis, Diagnostics and New*

Interventions Academic Press Navigating Non-coding RNA: From Biogenesis to Therapeutic Application provides a concise overview of the field of non-coding RNA (ncRNA). Chapters cover the history of discoveries that have occurred in the area of ncRNA, specific types of ncRNA, housekeeping ncRNAs such as ribosomal RNA, transfer RNA, small nuclear RNA and

telomerase RNA, regulatory ncRNAs such as microRNA, small interfering RNA, long non-coding RNA and Y RNA. Biogenesis, structure, function, and regulation of each of these are also explored in addition to traditional and cutting-edge methods for the identification, functional characterization and structural characterization of ncRNA. The book also focuses on the

different types of epitranscriptomic modifications and their involvement in regulating ncRNA structure, stability and intermolecular interactions in addition to the role of ncRNAs in a range of diseases and potential therapeutic applications. Covers a wide range of non-coding RNAs, including ribosomal RNA, transfer RNA, telomerase RNA, microRNA, small interfering	RNA and circular RNA Features both traditional and novel methodologies for investigating ncRNA, from microarray and conventional chemical probing to CAGE-seq and computational methods Includes chapters on ncRNAs in a range of diseases, including cancers, neurological disorders, cardiovascular conditions and infectious illnesses Discusses novel	therapeutic strategies for targeting ncRNAs, including CRISP/Ca9 applications and RNAi-based strategies Explores the molecular mechanisms and intermolecular interactions of ncRNA Unravelling Cancer Signaling Pathways: A Multidisciplinary Approach Academic Press Meiosis in Development and Disease, Volume 151 in the Current Topics in
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Developmental Biology series, highlights new advances in the field, with this new volume presenting interesting chapters on topics such as The initiation stages of meiosis, The molecular basis and dynamics of meiotic cohesions, and their significance in human infertility, Chromatin, recombination, and the centromeres, Sites and structures that mediate segregation when crossing over calls out sick/Life (or at Least Meiosis) Without Crossing Over, Crossover maturation inefficiency, Non coding RNA mediated gene regulation in meiosis, Short chromosomes in meiotic recombination, Chromatin level changes during meiosis initiation vs. oncogenesis, and much more. Other sections of note include Chromosomal speciation revisited: Meiotic recombination and synapsis of evolutionary diverged homologs, Recombination suppression at specific chromosome regions, Unwinding during stressful times - mechanisms of helicases in meiotic recombination, Meiotic functions of PCH-2/TRIP13 and HORMADs, Crossover interference, Checkpoint control in meiotic prophase: Idiosyncratic demands require unique characteristics, The breadth

of meiotic drive genes and mechanisms across the tree of life, and many more interesting topics. Provides the authority and expertise of leading contributors from an international board of authors. Presents the latest release in the Current Topics in Developmental Biology series. Updated release includes the latest information on the Meiosis in

Development and Disease *Droplets of Life* Elsevier. Fungi are now at the forefront of research on mechanisms in gene silencing, biological rhythm, mating processes, biogenesis of intracellular organelles, adaptations to hostile habitats, structure of natural populations, and speciation. Because of their small genomes, fungi are being used in "systems

biology" to understand the connections between ge New Frontiers and Applications of Synthetic Biology Scholarly Editions. A comprehensive text in the field of biomaterials science and tissue engineering, covering fundamental principles and methods related to processing-microstructure-property linkages as applied to biomaterials science.

Essential concepts and techniques of the cell biology are discussed in detail, with a focus quantitatively and qualitatively evaluating cell-material interaction. It gives detailed discussion on the processing, structure and properties of metals, ceramics and polymers, together with techniques and guidelines. Comprehensive coverage of in vitro and in vivo biocompatibility

y property evaluation of materials for bone, neural as well as cardiovascular tissue engineering applications, together with representative protocols. Supported by several multiple-choice questions, fill in the blanks, review questions, numerical problems and solutions to selected problems, this is an ideal text for undergraduate and graduate students in understanding

fundamental concepts and the latest developments in the field of biomaterials science. Plant Receptor-Like Kinases Springer Biomedical Product and Materials Evaluation: Standards and Ethics provides a much-needed overview of the procedures, issues, standards and ethical issues in the early development of biomedical products. The book covers a range of key biomedical

products, from 3D printed organs and blood derived products, to stem cells and decellularized tissue products. Each chapter reviews a single product type, associated materials, biomedical applications, proven development strategies, and potential challenges. The core focus of the book is on the standardization and ethical aspects of biomedical product development, with these

elements addressed and discussed in chapters dedicated to product evaluation. This is a useful reference for academics, researchers and industry professionals in R&D groups with an interest in biomaterial research and production, as well as those working in the fields of biomedical engineering, biotechnology and toxicology. Covers a variety of biomedical products, including

specific biomaterials, organs-on-chips, wound care products, combinational products, and more. Delves into strategies and considerations for product evaluation, including cytotoxicity assays, microbial and blood compatibility studies. Discusses standardization and ethical hurdles in biomedical product development and how to overcome them. Sirtuin Biology in Medicine

CRC Press
 In the past two decades, several pandemics have ravaged the globe, giving us several lessons on infectious disease epidemiology, the importance of initial detection and characterization of outbreak viruses, the importance of viral epidemic prevention steps, and the importance of modern vaccines. *Pandemic Outbreaks in the Twenty-First Century: Epidemiology, Pathogenesis, Prevention, and Treatment* summarizes the improvements in the 21st century to overcome / prevent / treat global pandemic with future prospective. Divided into 9 chapters, the book begins with an in-depth introduction to the lessons learned from the first pandemic of the 21st century. It describes the history, present and future in terms of detection, prevention and treatment. Followed by chapters on the outbreak, treatment strategies and clinical management of several infectious diseases like MERS, SARD and COVID 19, *Pandemic Outbreaks in the Twenty-First Century: Epidemiology, Pathogenesis, Prevention, and Treatment*, presents chapters on immunotherapies and vaccine technologies to combat

pandemic outbreak and challenges. The book finishes with a chapter on the current knowledge and technology to control pandemic outbreaks. All are presented in a practical short format, making this volume a valuable resource for very broad academic audience. Provides insight to the lessons learned from past pandemics Gives recommendations, future

direction in terms of detection, prevention and treatment of pandemics Guides readers through the status and recent developments of vaccines to overcome or prevent pandemics Shows how to enhance the host innate immunity in infectious diseases Includes a chapter on immunotherapies to combat pandemic outbreaks
Extremozymes and their Industrial Applications

Academic Press
Droplets of Life: Membrane-Less Organelles, Biomolecular Condensates, and Biological Liquid-Liquid Phase Separation provides foundational information on the biophysics, biogenesis, structure, functions, and roles of membrane-less organelles. The study of liquid-liquid phase separation has attracted a lot of attention from

disciplines such as cell biology, biophysics, biochemistry, and others trying to understand how, why, and what roles these condensates play in homeostasis and disease states in living organisms. This book's editor recruited a group of international experts to provide a current and authoritative overview of all aspects associated with this exciting area. Sections

introduce membrane-less organelles (MLOs) and biomolecular condensates; MLOs in different sizes, shapes, and composition; and the formation of MLOs due to phase separation and how it can tune reactions, organize the intracellular environment, and provide a role in cellular fitness. . Presents the first book to establish the foundations of this exciting research area Combines

biophysics, structural and cell biology, and biochemistry perspectives into a single volume Edited and authored by world-leading scientists Covers basic physical and biological principles and health and disease implications *Biomedical Product and Materials Evaluation* Academic Press Issues in Biological and Life Sciences Research: 2011 Edition is a ScholarlyEditio

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Advances in Cyanobacterial Biology

Academic Press
Microbial Diversity in the Genomic Era presents insights on the techniques used for

microbial taxonomy and phylogeny, along with their applications and respective pros and cons. Though many advanced techniques for the identification of any unknown bacterium are available in the genomics era, a far fewer number of the total microbial species have been discovered and identified to date. The assessment of microbial taxonomy and biosystematics techniques

discovered and practiced in the current genomics era with suitable recommendations is the prime focus of this book. Discusses the techniques used for microbial taxonomy and phylogeny with their applications and respective pros and cons. Reviews the evolving field of bacterial typing and the genomic technologies that enable comparative analysis of multiple genomes and the metagenomes

of complex microbial environments. Provides a uniform, standard methodology for species designation. *Membrane Proteins* Elsevier. Unravelling the intricate cell signalling networks and their significance in cancer poses major intellectual challenge. Keeping this in mind, the book aims at understanding the mechanism of action of different proteins and their

complexes in the cancer signalling pathways. Hence, the proposed book that comprises 20 chapters provides a comprehensive introduction on cell signalling, its alterations in cancer, molecules that have been popular targets as well as the ones that are emerging as targets. In addition, it discusses different forms of therapy that are coming up for its treatment.

Other than that, a major portion of the book is focused on studying different disciplines at the interface of biology and other areas of science that are being used to understand cancer biology in depth.

The Year Book of the Indian National Science Academy

Cambridge University Press
The book is divided into 9 units containing all the topics that come under

the syllabus. Each topic consists of a 'Key Notes' section, with additional updated information on the topic covered. All the topics are amplified well in the main part of the chapters, which includes well-labeled and neat figures, which may be easily understood and reproduced. To get the best from this book, the material should first be learned from the main part of the topic; the later

additional information. There is a reasonable number of exercises on the topics, the questions are well described and explained to guide the reader to related topics.

Pandemic

Outbreaks in the 21st

Century

Academic

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This book presents a timely review of the latest advances in rhizosphere biology, which have been facilitated by the application of omics tools. It includes

chapters on the use of various omics tools in rhizosphere biology, focusing on understanding plant and soil microbe interactions.

The role of proteomics and metagenomics in research on symbiotic association is also discussed in detail. The book also includes chapters on the use of omics tools for the isolation of functional biomolecules from rhizospheric microorganisms. The

book's respective sections describe and provide detailed information on important omics tools, such as genomics, transcriptomics, proteomics, metabolomics and meta-epigenomics. In turn, the book promotes and describes the combined use of plant biology, microbial ecology, and soil sciences to design new research strategies and innovative methods in soil biology.

Lastly, it highlights the considerable potential of the rhizosphere in terms of crop productivity, bioremediation, ecological engineering, plant nutrition and health, as well as plant adaptation to stress conditions. This book offers both a practical guide and reference source for all scientists working in soil biology, plant pathology, etc. It will also benefit students studying soil microbiology, and

researchers studying rhizosphere structure. *Computational Immunology* Elsevier Membrane Proteins, Volume 128 in the Advances in Protein Chemistry and Structural Biology series highlights new advances in the field, with this new volume presenting interesting chapters written by an international board of authors. Provides the authority and expertise of leading contributors

from an international board of authors
Presents the latest release in the Advances in Protein Chemistry and Structural Biology series
Updated release includes the latest information on the membrane proteins
Biomaterials for Musculoskeletal Regeneration Springer Nature
Description of the book •
Oswaal Topper's Handbooks Classes 11 &

12 • Tips to crack various entrance exams • Study Material for in-depth learning • Mind Maps for concept clarity • Real time videos for hybrid learning • Appendix for enhancement of knowledge • Revision Notes for quick revision • Commonly Made Errors to polish concepts

Science and Technology
Springer
Sirtuin Biology in Medicine: Targeting New Avenues of Care in Development, Aging, and

Disease provides a fascinating and in-depth analysis of sirtuins in the body during normal physiology as well during disease highlighting the targeting of sirtuin-controlled pathways for the development of innovative, efficacious, and safe therapeutic strategies for multiple disorders in the body that ultimately can affect lifespan extension. Sirtuins are expressed throughout

the body, have broad biological effects, and can significantly impact both cellular survival and longevity during acute and long-term illnesses. These histone deacetylases play an intricate role in the pathology, progression, and treatment of several disease entities ranging from neurodegenerative disorders, cardiovascular disease, immune system

dysfunction, reproductive dysfunction, endocrine disorders, gastrointestinal disease, drug dependency, and aging-related disorders. Implementing a translational medicine format, this unique reference highlights novel signaling pathways for sirtuins that promote stem cell proliferation, enhance cellular protection, modulate pathways of apoptosis and

autophagy, and extend life span. Each chapter is presented with insightful detail that will be of interest and a comprehensive resource to audiences that include scientists, physicians, pharmaceutical industry experts, nutritionists, and students. Chapters are authored by internationally recognized experts who discuss the broad role of sirtuins in health and disease. Details the basic and

clinical role of sirtuins for the development of new clinical treatments. Summarizes the multidisciplinary views and publications for the compelling discipline of sirtuins by covering systems throughout the body. Serves as an important resource for a broad audience of healthcare providers, scientists, drug developers, and students in both clinical and research settings.

Navigating Non-coding RNA Springer Nature Dynamics of Advanced Sustainable Nanomaterials and Their Related Nanocomposites at the Bio-Nano Interface highlights the most recent research findings (conducted over the last 5-6 years) on the dynamics of nanomaterials , including their multifaceted, advanced applications as sustainable materials. In addition, special

attributes of these materials are discussed from a mechanistic and application point-of-view, including their sustainability and interfacial interactions at the bio-nano interface and different applications. This book presents an important reference resource on advanced sustainable nanomaterials for chemical, nano-, and materials technologists who are looking to learn more

about advanced nanocomposites with sustainable attributes. Finally, the book examines the emerging market for sustainable materials and their advanced applications, with a particular focus on the bio-nano interface and their future outlook. Features detailed information on the fundamentals of bio-nano interfacial interactions in sustainable

nanomaterials Includes advanced applications of these materials that will help the end user select the appropriate materials for their desired application Features extensive information on the dynamics of these materials, helping the end user extend their work into new applications

Oswaal Handbook Biology Classes 11 & 12 All Leading Competitive Exams (New & Updated) Elsevier Phenotypic Switching: Implications in Biology and Medicine provides a comprehensive examination of phenotypic switching across biological systems, including underlying mechanisms, evolutionary significance, and its role in biomedical science. Contributions from international leaders discuss conceptual and theoretical aspects of phenotypic plasticity, its influence over biological development, differentiation, biodiversity, and potential applications in cancer therapy, regenerative medicine and stem cell therapy, among other treatments. Chapters discuss fundamental mechanisms of phenotypic switching, including transition states, cell fate decisions, epigenetic factors, stochasticity, protein-based inheritance,

specific areas of human development and disease relevance, phenotypic plasticity in melanoma, prostate cancer, breast cancer, non-genetic heterogeneity in cancer, hepatitis C, and more. This book is essential for active researchers, basic and translational scientists, clinicians, postgraduates and students in genetics, human genomics, pathology, bioinformatics ,

developmental biology, evolutionary biology and adaptive opportunities in yeast. Thoroughly addresses the conceptual, experimental and translational aspects that underlie phenotypic plasticity. Emphasizes quantitative approaches, nonlinear dynamics, mechanistic insights and key methodologies to advance phenotypic plasticity studies. Features a diverse range

of chapter contributions from international leaders in the field. Microbial Diversity in the Genomic Era Bentham Science Publishers. This book discusses the two different cellular approaches that are pursued in regenerative medicine: cell therapy and tissue engineering. It examines in detail the therapeutic application of hematopoietic stem cells in marrow regeneration,

multi-potent mesenchymal stem cells (MSCs), also referred to as mesenchymal stromal cells. The interest in MSCs can be seen in more than 150 clinical trials, some of which have progressed to Phase III, despite the cells' limited differentiation potential. The book also explores how embryonic stem (ES) cells, being pluripotent in nature, can resolve some of the problems associated with adult

stem cells, yet entail other challenges like risks of teratoma formation and immune rejection. A separate chapter deals with the role of noncoding RNAs in neuronal commitment of induced pluripotent stem (iPS) cells. Chapters like "Cord blood banking in India and the global scenario"; "3D bioprinting of tissue" and others will make this book an extremely interesting read for all

students, researchers and clinicians working in the area of regenerative medicine/stem cells. The book is broadly divided into two parts, the first of which is devoted to basic information on stem cells, and the second of which addresses potential clinical applications in the areas of hematology, cardiology, orthopedic and immune suppression, etc. Systems

Biology and Single-cell Analysis of Cancer Metabolism and its Role in Cancer Emergent Properties
CRC Press
Advances in Cyanobacterial Biology
presents the novel, practical, and theoretical aspects of cyanobacteria, providing a better understanding of basic and advanced biotechnological application in the field of sustainable agriculture. Chapters have been designed to deal with

the different aspects of cyanobacteria including their role in the evolution of life, cyanobacterial diversity and classification, isolation, and characterization of cyanobacteria through biochemical and molecular approaches, phylogeny and biogeography of cyanobacteria, symbiosis, Cyanobacterial photosynthesis, morphological and physiological adaptation to abiotic

stresses, stress-tolerant cyanobacterium, biological nitrogen fixation. Other topics include circadian rhythms, genetics and molecular biology of abiotic stress responses, application of cyanobacteria and cyanobacterial mats in wastewater treatments, use as a source of novel stress-responsive genes for development of stress tolerance and as a source of biofuels, industrial

application, as biofertilizer, cyanobacterial blooms, use in Nano- technology and nanomedicine s as well as potential applications. This book will be important for academics and researchers working in cyanobacteria, cyanobacterial	environmental biology, cyanobacterial agriculture and cyanobacterial molecular biologists. Summarizes the various aspects of cyanobacterial research, from primary nitrogen fixation, to advanced nano- technology	applications Addresses both practical and theoretical aspects of the cyanobacterial application Includes coverage of biochemical and molecular approaches for the identification, use and management of cyanobacteria
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