

T. Bjarsholt, Technical University of Denmark, Lyngby, Denmark (Ed.)

Biofilm Infections

This book will cover both the evidence for biofilms in many chronic bacterial infections as well as the problems facing these infections such as diagnostics and treatment regimes. A still increasing interest and emphasis on the sessile bacterial lifestyle biofilms has been seen since it was realized that less than 0.1% of the total microbial biomass lives in the planktonic mode of growth. The term was coined in 1978 by Costerton et al. who defined the term biofilm for the first time. In 1993 the American Society for Microbiology (ASM) recognised that the biofilm mode of growth was relevant to microbiology. Lately many articles have been published on the clinical implications of bacterial biofilms. Both original articles and reviews concerning the biofilm problem are available.

Features

- This will be the first book in this area to be devoted truly to diseases of biofilm infections
- Edited volume to include chapters by world-wide researchers

Fields of interest

Microbiology; Bacteriology; Cell Biology

Target groups

Professional/practitioner

Type of publication

Contributed volume

F. Baluška, University of Bonn, Germany; V. Ninkovic, Swedish University of Agricultural Science, Uppsala, Sweden (Eds.)

Plant Communication from an Ecological Perspective

This book shows the complexity of plant signaling and behavior in an ecological context and is intended to increase our understanding of it. It reflects the multifaceted interactions between plants and other organisms that affect their growth and development. In addition it puts emphasis on the effects of plant signaling and behavior on other trophic levels. This field of research is growing and developing rapidly, and new findings are regularly reported. Thus, this book provides a broader view of the field and represents a valuable reference work on the current state of research.

Features

- Shows the complexity of plant signaling and behavior in an ecological context
- Represents a valuable reference work on the current state of research
- Individual chapters deal with diverse aspects of plant communication

From the contents

Evolutionary Ecology of Plant Signals and Toxins: A Conceptual Framework.- The Chemistry of Plant Signaling.- Plant Defense Signaling from the Underground Primes Aboveground Defenses to Confer Enhanced Resistance in a Cost-Efficient Manner.- Allelopathy and Exotic Plant Invasion.- Volatile Interaction between Undamaged Plants - A Short Cut to Coexistence.- Volatile Chemical Interaction between Undamaged Plants - Effects at Higher Trophic Levels.- Within-plant Signaling by Volatiles Triggers Systemic Defences.

Fields of interest

Plant Sciences; Plant Ecology; Plant Physiology

Target groups

Research

Type of publication

Contributed volume

C. J. Barker, Karolinska Institutet, Stockholm, Sweden (Ed.)

Inositol Phosphates and Lipids

Methods and Protocols

Inositol, in its native or lipid derived forms, serves as a master building block which, when phosphorylated, leads to the construction of more than 30 unique isomeric forms that are employed in vital but diverse regulatory roles in cells. In *Inositol Phosphates and Lipids: Methods and Protocols*, expert researchers introduce the basic methodological tools to measure inositol lipids and phosphates and also describe new approaches that have become available in the last 10 years, including RNA-silencing and the use of fluorescently labeled PH-domains to measure inositides in real-time in live cells, new sensitive methods to measure mass of both phosphates and lipids, as well as protocols involving inositol pyrophosphates.

Features

- Serves as an easily accessible reference volume for all aspects of measurement of inositol phosphates and lipids contributed by front-line researchers in the field
- Combines in one volume methodologies for both inositol phosphates and lipids and the key enzymes which interconnect them
- Examines a wide range of methodologies from established techniques to the most recent innovations

Fields of interest

Cell Biology; Cell Physiology

Target groups

Research

Type of publication

Contributed volume

 Biomedical and Life Sciences

Due June 2010

2010. 350 p. 16 illus. in color. Hardcover

► **approx. € 130,15 | £118.50**
 ► **approx. * € (D) 139,26 | € (A) 143,17 | sFr 216,00**
 ISBN 978-1-4419-6083-2



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 Biomedical and Life Sciences

Due June 2010

2010. XII, 253 p. (Signaling and Communication in Plants) Hardcover

► **approx. € 129,95 | £117.00**
 ► **approx. * € (D) 139,05 | € (A) 142,94 | sFr 202,00**
 ISBN 978-3-642-12161-6



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 Humana Press

 Springer Protocols

Due May 2010

2010. X, 230 p. 108 illus., 54 in color. (Methods in Molecular Biology, Volume 645) Hardcover

► **€ 94,95 | £85.50**
 ► *** € (D) 101,60 | € (A) 104,45 | sFr 147,50**
 ISBN 978-1-60327-174-5



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A. G. Fett-Neto, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil (Ed.)

Plant Secondary Metabolism Engineering

Methods and Applications

Plants have evolved an amazing array of metabolic pathways leading to molecules capable of responding promptly and effectively to stress situations imposed by biotic and abiotic factors, some of which supply the ever-growing needs of humankind for natural chemicals, such as pharmaceuticals, nutraceuticals, agrochemicals, food and chemical additives, biofuels, and biomass. In *Plant Secondary Metabolism Engineering: Methods and Applications*, expert researchers provide detailed practical information on some of the most important methods employed in the engineering of plant secondary metabolism pathways and in the acquisition of essential knowledge in performing this activity, including the significant advances and emerging strategies. Written in the highly successful *Methods in Molecular Biology™* series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes on troubleshooting and avoiding known pitfalls.

Features

- ▶ Details the methods to introduce, manipulate, up and down regulate, and evaluate the expression of plant metabolism genes in both homologous and heterologous systems
- ▶ Supplies practical knowledge to establish viable systems for the demand of natural products as pharmaceuticals, food additives, nutraceuticals, and special chemicals

Fields of interest

Plant Sciences; Plant Genetics & Genomics; Gene Expression

Target groups

Professional/practitioner

Type of publication

Contributed volume

S. H. Gillespie, T. D. McHugh, UCL Medical School, London, UK (Eds.)

Antibiotic Resistance Protocols

Second Edition

Since the publication of the popular first edition, genomic methods have become more accessible, allowing antibiotic researchers to probe not only the sequence of antibiotic resistance determinants but the mechanism whereby they are expressed and regulated. That, in concert with array technology and an understanding of the importance of biofilms, has greatly expanded antibiotic resistance knowledge. In order to reflect the growing field, *Antibiotic Resistance Protocols, Second Edition* fully updates and builds upon its first edition with contributions from leading researchers. Beginning with chapters on epidemiology and population genetics, the book continues with sections covering genomics and gene expressions, fitness mutation and physiology, and the detection of resistance.

Features

- ▶ Presents a comprehensive guide to the key methods in the study of antibiotic resistance
- ▶ Focuses on the key pathogens in clinical practice
- ▶ Provides methods described by 'hands on' scientists drawing on their practical experience
- ▶ Includes a wide range of technologies including phenotypic and genotypes sensitivity testing

Fields of interest

Microbiology; Antibodies

Target groups

Professional/practitioner

Type of publication

Contributed volume

T. Hökfelt, Karolinska Institutet, Stockholm, Sweden (Ed.)

Galanin

Galanin is a neuropeptide which is found in the central and peripheral nervous system. It is involved in a number of physiological processes such as regulation of food intake, metabolism and reproduction, regulation of neurotransmitter and hormone release, nociception, intestinal motility and secretion, and more recently in nervous system development and response to injury. The wide diversity of actions is mediated by several galanin receptor subtypes.

This book gives an overview of the current state of galanin research and shows how the identification, isolation and characterization of this peptide was brought about and how the functionality of galanin was revealed as the pharmacological tools to dissect galaninergic mechanisms were developed.

Field of interest

Neurobiology

Target groups

Research

Type of publication

Monograph

 Humana Press

 Springer Protocols

Due May 2010

2010. X, 326 p. 118 illus., 59 in color. (Methods in Molecular Biology, Volume 643) Hardcover

▶ € 109,95 | £99.00

▶ * € (D) 117,65 | € (A) 120,95 | sFr 171,00

ISBN 978-1-60761-722-8



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 Humana Press

 Springer Protocols

Due May 2010

2nd ed. 2010. XII, 236 p. 74 illus., 37 in color. (Methods in Molecular Biology, Volume 642) Hardcover

▶ € 94,95 | £85.50

▶ * € (D) 101,60 | € (A) 104,45 | sFr 147,50

ISBN 978-1-60327-278-0



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 Biomedical and Life Sciences

Due June 2010

2010. Approx. 300 p. (Experientia Supplementum, Volume 102) Hardcover

▶ approx. € 149,00 | £134.00

▶ approx. * € (D) 159,43 | € (A) 163,90 |

sFr 259,00

ISBN 978-3-0346-0227-3



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W. J. Junk, M. T. Piedade, F. Wittmann, J. Schöngart, P. Parolin (Eds.)

Amazonian Floodplain Forests Ecophysiology, Biodiversity and Sustainable Management

Central Amazonian floodplain forests are an unique and endangered ecosystem. The forests grow in areas that are annually flooded by large rivers during mean periods of up to 8 months and at depths of up to 10 m. Despite this severe stress, these forests consist of over 1,000 species and are by far the most species-rich floodplain forests worldwide. The trees show a broad range of morphological, anatomical, physiological, and phenological adaptations that enable them not only to survive the adverse environmental conditions, but also to produce large amounts of biomass when the nutrient levels in water and soils are sufficiently high. This is the case in the floodplains of white-water rivers, which are used for fisheries, agriculture, and cattle-ranching but which also have a high potential for the production of timber and non-timber products, when adequately managed.

Features

► The first integrative book on the functioning and ecologically oriented use of floodplain forests in the tropics and sub-tropics ► Provides a solid scientific basis for wetland ecologists, foresters, environmentalists, and wetland managers ► Excellent textbook for students working in Amazonian floodplain forests and similar forest types in other regions ► Features latest research on ecophysiology with insight on how tree species adapt to the flood-pulse

Fields of interest

Applied Ecology; Tree Biology; Biodiversity

Target groups

Research

Type of publication

Contributed volume

E. Lichtfouse, French National Institute for Agricultural Research (INRA), Dijon, France (Ed.)

Genetic Engineering, Biofertilisation, Soil Quality and Organic Farming

Sustainable agriculture is a rapidly growing field aiming at producing food and energy in a sustainable way for humans and their children. Sustainable agriculture is a discipline that addresses current issues such as climate change, increasing food and fuel prices, poor-nation starvation, rich-nation obesity, water pollution, soil erosion, fertility loss, pest control, and biodiversity depletion. Novel, environmentally-friendly solutions are proposed based on integrated knowledge from sciences as diverse as agronomy, soil science, molecular biology, chemistry, toxicology, ecology, economy, and social sciences. Indeed, sustainable agriculture decipher mechanisms of processes that occur from the molecular level to the farming system to the global level at time scales ranging from seconds to centuries. For that, scientists use the system approach that involves studying components and interactions of a whole system to address scientific, economic and social issues.

Features

► First book on Sustainable Agriculture ► Sustainable Agriculture is the sole science to solve global society issues ► Addresses issues from the molecular to the global level, using integrated knowledge from agronomy, biology, geology, ecology, chemistry, environmental, social and economic sciences and political disciplines ► Sustainable Agriculture provides healthy food

Fields of interest

Agriculture; Sustainable Development; Plant Sciences

Target groups

Research

Type of publication

Contributed volume

M. J. Lord, M. R. Hartley, University of Warwick, UK (Eds.)

Toxic Plant Proteins

Many plants produce enzymes collectively known as ribosome-inactivating proteins (RIPs). RIPs catalyze the removal of an adenine residue from a conserved loop in the large ribosomal RNA. The adenine residue removed by this depurination is crucial for the binding of elongation factors. Ribosomes modified in this way are no longer able to carry out protein synthesis. Most RIPs exist as single polypeptides (Type 1 RIPs) which are largely non-toxic to mammalian cells because they are unable to enter them and thus cannot reach their ribosomal substrate. In some instances, however, the RIP forms part of a heterodimer where its partner polypeptide is a lectin (Type 2 RIPs). These heterodimeric RIPs are able to bind to and enter mammalian cells. Their ability to reach and modify ribosomes in target cells means these proteins are some of the most potently cytotoxic poisons found in nature, and are widely assumed to play a protective role as part of the host plant's defenses.

Features

► Written by acknowledged experts in the field ► The book focuses on the structure, function and some ► Potential applications of toxic plant proteins

From the contents

Evolution of Plant Ribosome-Inactivating Proteins.- RNA N-Glycosidase Activity of Ribosome-Inactivating Proteins.- Enzymatic Activities of Ribosome-Inactivating Proteins.- Type I Ribosome-Inactivating Proteins from *Saponaria officinalis*.- Type 1 Ribosome-Inactivating Proteins from the Ombú Tree (*Phytolacca dioica* L.).- Sambucus Ribosome-Inactivating Proteins and Lectins.- Ribosome-Inactivating Proteins from *Abrus pulchellus*.- Ribosome-Inactivating Proteins in Cereals.- Ribosome-Inactivating Proteins in Cereals.

Fields of interest

Plant Biochemistry; Cell Biology; Plant Physiology

Target groups

Research

Type of publication

Contributed volume

 Biomedical and Life Sciences

Due May 2010

2010. Approx. 500 p. (Ecological Studies) Hardcover

► **approx. € 129,95 | £117.00**
► **approx. * € (D) 139,05 | € (A) 142,95 | sFr 202,00**
ISBN 978-90-481-8724-9



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 Biomedical and Life Sciences

Due April 2010

2010. 390 p. (Sustainable Agriculture Reviews, Volume 4) Hardcover

► **approx. € 149,95 | £135.00**
► **approx. * € (D) 160,45 | € (A) 164,95 | sFr 233,00**
ISBN 978-90-481-8740-9



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 Biomedical and Life Sciences

Due July 2010

2010. X, 270 p. 41 illus., 12 in color. (Plant Cell Monographs, Volume 18) Hardcover

► **approx. € 129,95 | £118.50**
► **approx. * € (D) 139,05 | € (A) 142,95 | sFr 216,00**
ISBN 978-3-642-12175-3



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P. Mullany, A. P. Roberts, UCL Eastman Dental Institute, London, UK (Eds.)

Clostridium difficile

Methods and Protocols

Clostridium difficile, a major nosocomial pathogen shown to be a primary cause of antibiotic-associated disease, has emerged as a highly transmissible and frequently antibiotic-resistant organism, causing a considerable burden on health care systems worldwide. In *Clostridium difficile: Methods and Protocols*, expert researchers bring together the most recently developed methods for studying the organism, including techniques involving isolation, molecular typing, genomics, genetic manipulation, and the use of animal models. Written in the highly successful *Methods in Molecular Biology*™ series format, chapters include brief introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes highlighting tips on troubleshooting and avoiding known pitfalls.

Features

► Serves as a comprehensive guide to most of the current techniques for manipulating and analyzing *C. difficile* ► Written by scientists who have pioneered modern *C. difficile* research ► Brings together in one place chapters from clinicians, clinical laboratory scientist, and basic scientists to provide a comprehensive understanding of the practical state of the art in *C. difficile* research

Fields of interest

Microbiology; Pathology; Laboratory Medicine

Target groups

Professional/practitioner

Type of publication

Contributed volume

A. J. Rai, Columbia University Medical Center, New York, NY, USA (Ed.)

The Urinary Proteome

Methods and Protocols

Urine is one of the most easily accessible biological samples, and it provides a treasure trove of molecules essential for clinical diagnostics. In *The Urinary Proteome: Methods and Protocols*, expert researchers review briefly the classical urine tests that are performed in the clinical laboratory and then delve into the state of the art methods for proteomic analysis using urine specimens. Featuring the most recent advances in sample preparation, data analysis, and methods and applications, the book contains a multitude of detailed methods, including procedural details for the identification and characterization of urine biomarkers, which hold great potential for the diagnosis and treatment of many different disease conditions. Written in the highly successful *Methods in Molecular Biology*™ series format, chapters present brief introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes highlighting tips on troubleshooting and avoiding known pitfalls.

Features

► Details the multitude of processes and technologies for identifying protein biomarkers from urine specimens ► Presents a modular approach to experimental design, covering all steps in urine-based biomarker discovery workflows, from handling & processing of urine specimens, to the generation of data using various state-of-the-art & classical techniques, to analysis & interpretation of results using bioinformatics

Fields of interest

Protein Science; Proteomics

Target groups

Research

Type of publication

Contributed volume

J. F. Rehfeld, Rigshospitalet, Copenhagen, Denmark; J. R. Bundgaard (Eds.)

Cellular Peptide Hormone Synthesis and Secretory Pathways

The purpose of the present volume is to illustrate the modern biological concept of basic endocrinology in one single book. It first describes general issues such as maturation of secretory granules in the cells, the roles of the chaperonic granins, and cell-specific prohormone processing. Subsequently, the specific part of the book illustrates the new endocrine biology, using as examples a broad variety of individual peptide systems: ACTH, Neurotensin and Neuromedines, Natriuretic Peptides, Glucagon and Glucagon-like peptides, Somatostatin, Ghrelin, Gastrin and VIP (Vasoactive Intestinal Polypeptide).

Features

► Illustrates the new endocrine biology, using as examples a broad variety of individual peptide systems

Fields of interest

Cell Biology; Biochemistry, general

Target groups

Research

Type of publication

Monograph

 Humana Press

 Springer Protocols

Due May 2010

2010. XII, 216 p. 78 illus., 39 in color. (Methods in Molecular Biology, Volume 646) Hardcover

► € 94,95 | £85.50

► * € (D) 101,60 | € (A) 104,45 | sFr 147,50

ISBN 978-1-60327-364-0



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 Humana Press

 Springer Protocols

Due May 2010

2010. Approx. 360 p. 82 illus., 4 in color. (Methods in Molecular Biology, Volume 641) Hardcover

► € 109,95 | £99.00

► * € (D) 117,65 | € (A) 120,95 | sFr 171,00

ISBN 978-1-60761-710-5



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 Biomedical and Life Sciences

Due April 2010

2010. Approx. 300 p. (Results and Problems in Cell Differentiation, Volume 50) Hardcover

► approx. € 129,95 | £117.00

► approx. * € (D) 139,05 | € (A) 142,94 |

sFr 202,00

ISBN 978-3-642-11834-0



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M. Stoffel, M. Bollschweiler, University of Berne, Switzerland; D. R. Butler, Texas State University, San Marcos, TX, USA; B. H. Luckman, University of Western Ontario, London, ON, Canada (Eds.)

Tree Rings and Natural Hazards

A State of the Art

Features

► State-of-the-art book on tree-ring dating of natural hazards ► First extensive compilation of classical and unpublished studies in hazard related tree-ring research ► Outlines and demonstrates practical applications of tree rings in natural hazards study ► Potential utility in specialist graduate and undergraduate and technical courses

Contents

From the Table of Contents: Dedication.- Foreword: Dendrogeomorphology beginnings and futures – a personal reminiscence.- 1 Tree rings and natural hazards – an introduction.- 2 Snow avalanches.- 3 Landslides.- 4 Rockfall.- 5 Debris flows.- 6 Flooding.- 7 Meteorological hazards.- 8 Wildfires.- 9 Earthquakes.- 10 Volcanic activity.- 11 Overall conclusion and outlook.- Index.

Fields of interest

Natural Hazards; Geomorphology; Physical Geography

Target groups

Research

Type of publication

Contributed volume

 Earth and Environmental Science

Due May 2010

2010. Approx. 415 p. 354 illus., 177 in color. (Advances in Global Change Research, Volume 41) Hardcover

► **approx. € 129,95 | £117.00**

► **approx. * € (D) 139,05 | € (A) 142,94 |**

sFr 202,00

ISBN 978-90-481-8735-5



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