Genomics and Proteomics

Principles, Technologies, and Applications

The fundamental knowledge presented in this book opens up an entirely new way of approaching DNA chip technology, DNA array assembly, gene expression analysis, assessing changes in genomic DNA, structure-based functional genomics, protein networks, and more.

Topics in the book include:

- different gene products with a similar role in neuronal defense against oxidative stress
- gene-gene and gene-environment interactions in genetic epidemiology
- elucidation of proto-oncogene c-Abl function with the use of mouse models and the disease model of chronic myeloid leukemia
- next-generation sequencing, microbiome evaluation, molecular microbiology, and their impact on human health
- proteomics and prostate cancer
- RNA interference therapeutics
- molecular mechanisms of hepatitis C virus entry
- molecular phylogenetics for elucidation of evolutionary processes from biological data
- the impact of transgenic crops on soil quality, microbial diversity, and plant-associated communities
- biotechnological and genomic approaches for abiotic stress tolerance in crop plants
- and more

The book will be valuable for biotechnology researchers and bioinformatics professionals and students in all fields of biotechnology and will serve to broaden their knowledge about these newer tools, techniques, innovations, and applications.

ABOUT THE EDITORS

Devarajan Thangadurai, PhD, is Senior Assistant Professor at Karnatak University in South India; President of the Society for Applied Biotechnology; and General Secretary for the Association for the Advancement of Biodiversity Science. In addition, Dr. Thangadurai is Editor-in-Chief of several journals, including *Biotechnology, Bioinformatics and Bioengineering; Acta Biologica Indica; Biodiversity Research International;* and the *Asian Journal of Microbiology.* He has edited/authored fifteen books including *Genetic Resources and Biotechnology* (3 vols.), *Genes, Genomes and Genomics* (2 vols.), and *Mycorrhizal Biotechnology* with publishers of national and international reputation.

Jeyabalan Sangeetha, PhD, is the UGC Kothari Postdoctoral Fellow at Karnatak University in South India. She is the recipient of the Tamil Nadu Government Scholarship and the Rajiv Gandhi National Fellowship of University Grants Commission, Government of India, for her doctoral studies. She has published approximately 20 manuscripts detailing the effect of pollutants on the environment, and has organized conferences, seminars, workshops, and lectures. Her scientific and community leadership have included serving as an editor of the journal *Biodiversity Research International* and as Secretary for the Society for Applied Biotechnology.

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