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Nota di contenuto	Safety Norms and Regulations in Handling Fungal Specimens -- Methods of Cryopreservation in Fungi -- Long Term Preservation of Fungal Cultures in All-Russian Collection of Microorganisms (VKM): Protocols and Results -- Fungal Specimen Collection and Processing -- Chemical and Molecular Methods for Detection of Toxigenic Fungi and Their Mycotoxins from Major Food Crops -- Identification Key for the Major Growth Forms of Lichenized Fungi -- Microscopic Methods for Analytical Studies of Fungi -- Scanning Electron Microscopy for Fungal Sample Examination -- High Resolution Imaging and Force Spectroscopy of Fungal Hyphal Cells by Atomic Force Microscopy -- Use of Fourier-Transform Infrared (FTIR) Microscopy Method For Detection of Phyto-Fungal Pathogens -- Diagnose of Parasitic Fungi in The Plankton: Technique for Identifying And Counting Infective Chytrids Using Epifluorescence Microscopy -- Fungal Cell Wall Analysis -- Histopathological Technique for Detection of Fungal Infections in Plants -- Development of Media for Growth and Enumeration of Fungi from Water -- Sabouraud Agar for Fungal Growth -- A Method for the

Formation of Candida Biofilms in 96 Well Microtiter Plates and its Application to Antifungal Susceptibility Testing -- Screening for Compounds Exerting Antifungal Activities -- Fluorescence In situ Hybridization of Uncultured Zoosporic Fungi -- Staining Techniques and Biochemical Methods for the Identification of Fungi -- Protocol for the In vivo Quantification of Superoxide Radical in Fungi -- Isolation of Intact RNA from Sorted S. cerevisiae Cells for Differential Gene Expression Analysis -- Quantitative PCR Analysis of Double-Stranded RNA-Mediated Gene Silencing in Fungi -- Semi-nested PCR Approach to Amplify Large 8S rRNA Gene Fragments for PCR-DGGE Analysis of Soil Fungal Communities -- Proteomic Protocols for the Study of Filamentous Fungi -- Detection and Quantification of Endoprotease Activity Using a Coomassie Dye-Binding Assay -- Protocol of a LightCycler PCR Assay for Detection and Quantification of Aspergillus fumigatus DNA in Clinical Samples of Neutropenic Patients -- Application of Polymerase Chain Reaction (PCR) and PCR Based Methods Targeting Internal Transcribed Spacer (ITS) for Detection and Species Level Identification of Fungi -- Real-Time PCR Assay in Fungi -- Quantitative Sampling Methods for the Analysis of Fungi: Air Sampling -- Transformation of Filamentous Fungi in Microtiter Plate -- Molecular Fingerprinting of Fungal Communities in Soil -- Development of Microsatellite Markers from Fungal DNA Based on Shotgun Pyrosequencing -- Multiplex and Quantifiable Detection of Infectious Fungi Using Padlock Probes, General qPCR and Suspension Microarray Readout -- Rapid Deletion Plasmid Construction Methods for Protoplast and Agrobacterium-based Fungal Transformation Systems -- Improved Transformation Method for Alternaria brassicicola and its Applications -- Methods for High Quality DNA Extraction from Fungi -- Production of Recombinant Proteins from Pichia pastoris: Interfacing Fermentation and Immobilized Metal Ion Affinity Chromatography -- Development of a Real-Time Quantitative PCR Assay for the Assessment of Uncultured Zoosporic Fungi -- Nucleic and Protein Extraction Methods for Fungal Exopolysaccharide Producers -- Directed Evolution of A Fungal Xylanase for Improvement of Thermal and Alkaline Stability -- Genome Shuffling Protocol for the Pentose-Fermenting Yeast Scheffersomyces stipitis -- Detection and Identification of Fungal Microbial Volatile Organic Compounds by HS-SPME-GC-MS -- Transformation Methods for Slow Growing Fungi -- Enzymatic Saccharification of lignocellulosic biomass -- Protoplast Fusion Techniques in Fungi -- Large Scale Production of Lignocellulolytic Enzymes in Thermophilic Fungi -- Panfungal PCR Method for Detection of Aflatoxigenic Molds -- Protocols for the Quantification of dsDNA and Its Fragmentation Status in Fungi -- Rapid Identication and Detection of Pathogenic Fungi by Padlock Probes -- Drug-Induced Permeabilization in Fungi -- Extraction and Characterization of Taxol: An Anticancer Drug from an Endophytic And Pathogenic Fungi -- Identification of Mycotoxigenic Fungi using an Oligonucleotide Microarray -- DNA Microarray-Based Detection and Identification of Fungal Specimens -- Bioinformatic Protocols and the Knowledge-Base for Secretomes in Fungi -- High-Throughput Functional Annotation and Data Mining of Fungal Genomes to Identify Therapeutic Targets -- Application of Support Vector Machines in Fungal Genome and Proteome Annotation -- Bioinformatics Tools for the Multilocus Phylogenetic Analysis of Fungi.

Sommario/riassunto

Laboratory Protocols in Fungal Biology presents the latest techniques in fungal biology. This book analyzes information derived through real experiments, and focuses on cutting edge techniques in the field. The book comprises 57 chapters contributed from internationally recognised scientists and researchers. Experts in the field have

provided up-to-date protocols covering a range of frequently used methods in fungal biology. Almost all important methods available in the area of fungal biology viz. taxonomic keys in fungi; histopathological and microscopy techniques; proteomics methods; genomics methods; industrial applications and related techniques; and bioinformatics tools in fungi are covered and complied in one book. Chapters include introductions to their respective topics, list of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and notes on troubleshooting. Each chapter is self-contained and written in a style that enables the reader to progress from elementary concepts to advanced research techniques. Laboratory Protocols in Fungal Biology is a valuable tool for both beginner research workers and experienced professionals. Coming Soon in the Fungal Biology series: Goyal, Manoharachary / Future Challenges in Crop Protection Against Fungal Pathogens Martín, García-Estrada, Zeilinger / Biosynthesis and Molecular Genetics of Fungal Secondary Metabolites Zeilinger, Martín, García-Estrada / Biosynthesis and Molecular Genetics of Fungal Secondary Metabolites, Volume 2 van den Berg, Maruthachalam / Genetic Transformation Systems in Fungi Schmoll, Dattenbock / Gene Expression Systems in Fungi Dahms / Advanced Microscopy in Mycology.