

Pathogenic Fungi

Host Interactions and Emerging Strategies for Control



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During the past decade we have witnessed a mushrooming of papers in the area of medical mycology; detailing major advances in areas such as genomics, molecular and cellular biology, molecular epidemiology, immune response and vaccine development, and strategies to combat infections in humans. This sheer volume of information makes it extremely difficult for the busy research scientist and/or teacher of medical mycology to keep abreast of all the latest advances. This book, together with its companion volume *Pathogenic Fungi: Structural Biology and Taxonomy*, brings together expert international authors who critically review current topics, and through the provision of extensive reference sections positively encourage readers to pursue the subject in greater detail.

The book is divided into two sections: Fungal Interactions with the Host and Antifungal Antibiotics. The emphasis of the first section is focused on the two-way recognition systems that exist between the host and the fungus. Experts in fungal-host interactions discuss new initiatives for alternatives to drug therapy through the development of vaccines and passive antibody therapy. In the Antifungal Antibiotics section, new target development, molecular modelling, and drug resistance, both at the individual organism level, and in a biofilm, are featured.

Essential reading for everyone with an interest in medical mycology including: mycologists, biotechnologists, molecular biologists, and pharmaceutical and biotechnology companies.

Chapter 1. Host Recognition by Fungal Pathogens. *Elaine Bignell, Tom Rogers and Ken Haynes*

Chapter 2. Virulence Factors That Protect the Fungus From Elimination. *M. Feldmesser*

Chapter 3. Virulence Factors That Promote Invasion of *Candida albicans*. *Martin Schaller, H. C. Korting and B. Hube*

Chapter 4. Adaptation to Oxidative, Nutrient and Ph Stress by Human Pathogenic Fungi. *Neeraj Chauhan and Richard A. Calderone*

Chapter 5. Innate Immunity to Fungi: The Art of Speed and Specificity. *Luigina Romani*

Chapter 6. T- and B-lymphocytes in Mucosal Candidiasis. *F. De Bernardis, M. Boccanera, C. Amantini and G. Santoni*

Chapter 7. Immunomodulation and Immunoprotection in Fungal Infections: Humoral and Cellular Immune Responses. *Luiz R. Travassos, A. Casadevall, and C.P. Taborda*

Chapter 8. Genomic instability, Recombination and Adaptation in *Candida albicans*. *Germán Larriba*

Chapter 9. Antifungal Drugs, Targets and Target Discovery. *D. Li and R. A. Calderone*

Chapter 10. Molecular Basis of Antifungal Resistance. *Rajendra Prasad, Nivedita Gupta, and Manisha Gaur*

Chapter 11. Fungal Biofilms and Drug Resistance. *Gordon Ramage and José L. López-Ribot*

Chapter 12. Molecular Modelling of Echinocandin-Type Antibiotics Using Molecular Mechanics and Density Functional Theory Calculations. *Juan Murgich, H. Franco and G. San-Blas*

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