

PREFACE

The fungal kingdom represents vast, ecologically and biologically diverse panoply of eukaryotic micro-organisms. Fungi can be found in every place wherever adequate moisture, temperature, and organic substrates are available; however, they also occupy extreme habitats, from hot volcanoes to arctic zones, arid deserts, and deep oceans. As additional new species are identified, it has become clear that scientists have yet to discover the true biodiversity of micro-organisms that have, for so long, had an intricate and important relationship with humankind. The importance of fungi as a group is tremendous; most species are saprobes and play prime roles in decomposition and the recycling of organic matter and nutrients, and many of them produce enzymes and metabolites with important applications in pharmacology, biotechnology, and other industries. Alongside the positive aspects, fungi also cause huge damage, primarily as plant pathogens. Fungi are highly amenable to molecular work, and a few fungal species serve as model systems to study basic processes with results that are applicable to many organisms, including humans. Understanding the biology, genetics and physiology of fungi has provided essential information for the development of strategies to control fungal diseases, for the exploitation of fungi as cell factories for protein and metabolite production, as well as their use in food and pharma applications, environmental bioremediation and biocontrol. This book reviews some of the significant developments in fungal biochemistry and biotechnology, including the more recent application of sophisticated molecular approaches to unlock the fungal treasure trove.

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