

Protozoan Parasitism

From Omics to Prevention and Control

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Preface

In the postgenomic era, 'omics' sciences play a key role in basic and applied research. Over the last 15 years numerous protozoan parasite genomes have been sequenced, annotated and made available in public databases. In this way, genomics has laid an important foundation, on which new bricks can be added to our understanding of these diseases and opened new avenues for advancing molecular models that, in many cases, are free from the scientific community. This new information has stimulated and fuelled research in vaccine and drug discovery and new approaches for high-throughput experimentation and genetic engineering.

This book, *Protozoan Parasitism: From Omics to Prevention and Control*, provides a comprehensive account of advances and new insights into protozoan parasitic diseases with a special focus on omics sciences and their basic and clinical applications. A large portion of the book is dedicated to contributions made in the field of kinetoplastid parasites, the aetiological agents of devastating diseases such as leishmaniasis, Chagas disease or sleeping sickness. Within this part of the book (Chapters 1, 2, 3 and 5) we provide relevant information in different proteomics approaches (including glycoproteomics) together with historical perspectives in this area. The study of protozoan parasites has also benefited from new genome-editing technologies (e.g. CRISPR-Cas9, zinc finger endonucleases, cloning-free endogenous tagging) that are revolutionizing this area, described in Chapter 4. The second part of the book is dedicated to advances made in the search for high-throughput approaches for the targeting and control of amoebiasis, an infection caused by any of the amoebas belonging to the *Entamoeba* group.

All the advances described in this book are steps towards the control and prevention of these diseases. With the hope that this book will prove useful, we believe that the reader may go on to find more answers in the field of protozoan parasites.

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