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BOOK REVIEW

Parish, T. and Stoker, N. G., editors. *Methods in Molecular Biology. Vol. 101 Mycobacteria Protocols.* Totowa, New Jersey: Humana Press, 1998. ISBN 0-89603-471-2. Hard cover, 480 pp., US$79.50, includes figures and index. Available from Humana Press, 999 Riverview Drive, Suite 208, Totowa, NJ 07512, U.S.A. FAX 1-973-256-8341. (Humana Press books are distributed in the U.K., Europe, Africa, the Middle East, and India by Blackwell Science Ltd.)

Mycobacteria Protocols by Parish and Stoker brings together relevant protocols for a broad audience of molecular biologists engaged in the study of mycobacterial pathogenicity, genetics, biochemistry and pharmacology. The book describes more than 25 specific protocols, usually one per chapter, with a few broad discussion chapters aimed at more general areas, such as cultivation of mycobacteria, safety in the laboratory, and computer software designed to organize and integrate data in relation to the mycobacterial genome projects. The first eight chapters cover basic protocols needed for most investigators studying general aspects of mycobacteria, including culture, safety, nucleic acid, protein and cell wall preparation and purification. While some of these topics may seem mundane to experts in the field, I think the editors showed good judgment by including them; particularly, the chapters on safety and culture techniques which serve to remind all investigators of the potential hazards associated with mycobacterial research.

Chapter 9, "MycDB on the World-Wide Web," gives the reader a taste of the possibilities for using computer-assisted analysis of newly available genomic data emerging from the mycobacterial genome projects. Chapters 10–12 provide a diverse collection of methods for introducing extrachromosomal DNA into mycobacteria, including conjugation, electroporation and transfection with well-characterized mycobacteriophage. A large section of the book is given to protocols used for creating mutants and for accomplishing gene replacement in mycobacteria. This investment seems appropriate since these areas continue to be the most resistant to simple manipulation, at least in the slow growing pathogens, and because advances in this realm are critical to accruing knowledge in fields related to drug discovery and pathogenics.

Chapters 19–24 describe protocols related to analyzing gene expression in mycobacteria and, as evidenced by their wide diversity of approaches, demonstrate the difficulties inherent in studying this basic aspect of mycobacteria. The last seven chapters are aimed at providing the reader with an overview of the diagnostic problems associated with speciation and strain identification of pathogenic mycobacteria. Newer molecular approaches are highlighted against the backdrop of standard techniques with reasonably good discussions about the appropriateness of some of the developing technologies.

The editors adopted the highly effective organizational strategy for each chapter of providing a brief, but informative, historical perspective followed by a detailed description of the materials to be used in the protocol and a general description of the methods to be employed. Usually this amount of information is sufficient for an investigator to apply a technique to his or her own studies. However, even the experienced investigator may find that this is not enough detail when initiating molecular studies with mycobacteria. The final section of each chapter, "Notes," should bridge this gap. This section is a collection of information relevant to molecular biology studies of mycobacteria that has been learned, often the hard way, by investigators over the last 10–15 years. These tidbits of information do not always appear in primary publications but are often critical to the investigator interpreting his or her own studies which can be confounded by the unusual biochemistry and physiology of mycobacteria.

Mycobacterial Protocols is appropriate for its proposed audience of molecular microbiologists, biochemists and cell biolo-

gists. Its strengths are found in the broad selection of useful, well-documented protocols written by individuals responsible for their development and in the accompanying "Notes" section describing idiosyncracies involved in molecular studies of mycobacteria.—Thomas P. Gillis, Ph.D.