

Target Practice

Target Discovery and Validation: Reviews and Protocols. Volume 1: Emerging Strategies for Targets and Biomarker Discovery, and Volume 2: Emerging Molecular Targets and Treatment Options

Edited by Mouldy Sioud

Humana Press, Totowa 2007. xii+354 pp., hardcover \$125.00.—ISBN 978-1-58829-656-6 (vol. 1), xiv+344 pp., hardcover \$125.00.—ISBN 978-1-58829-890-4 (vol. 2)

These companion volumes are recent additions to the *Methods in Molecular Biology* series. The two volumes review current methods for drug target discovery and validation. The impact of recent improvements in understanding the molecular mechanisms of human pathology on drug target discovery is emphasized. The primary focus of the two volumes is on cancers and autoimmune disorders. The volumes contain a mixture of reviews and protocols making for a somewhat uneven, but nonetheless useful, compendium.

Volume 1 is focused on drug target and biomarker discovery. The topics covered in the 17 chapters range from a general overview of the approaches to target discovery and validation to a very specific, step-by-step protocol for an in vivo assay of human angiogenesis. Whether review or protocols, the chapters are generally well written and clear, and provide extensive references to the current literature. A wide range of bioinformatics, proteomic, and nucleic acid based approaches are described, along with cell and animal assays, and model systems.

Volume 2 contains another 17 chapters, again a mixture of reviews and detailed protocols. These chapters attempt to provide descriptions of the process required for the translation of new discoveries in proteomics into therapeutically

applicable targets. Specific targets in cancers and autoimmunity are described and the potential of using siRNAs, anti-sense oligonucleotides, and RNA aptamers as therapeutic agents is reviewed. Again, the chapters are generally well written and clear, and provide extensive references to the current literature.

Overall, these two volumes provide useful overviews that would provide entry into this field. Novice and more experienced researchers alike would find useful information in both of these volumes.

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The Evolution from Protein Chemistry to Proteomics: Basic Science to Clinical Application

By Roger L. Lundblad.

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The spectacular development of proteomics in recent years has stimulated a fairly rich output of books on the subject, from general introductory texts to more specialized works on particular areas of proteomics, to hands-on laboratory guides. In such a fast-moving field, textbook obsolescence is practically inevitable so one is always on the lookout for new titles that enrich the literature of this very dynamic area of the life sciences.

Dr. Roger L. Lundblad, a recognized expert in protein chemistry, is well known for his contributions to the chemical modification of proteins, a field on which he has authored several books. In

this new volume, he aims to emphasize the necessary, but not always recognized, connection between the classical methods of protein chemistry and the diverse concepts and techniques used in current proteomic research. With his extensive expertise in protein chemistry, Dr. Lundblad is in a privileged position to outline the evolution of the field, and to assess its current development and perspectives.

The book is divided into eight chapters dealing with different aspects of proteomics, with considerable focus—practically one half of the text—on the author's own area of expertise, as well as on other areas such as sample preparation and enrichment. The opening chapter provides a brief overview of the field, with some definitions and correlations to other "omics" technologies. Proteomics itself is classified into three main areas of activity: analytical, expression and biomarker identification. These activities are only succinctly outlined; a novice reader will need to look elsewhere for more informative presentations. The chapter ends with a substantial set of literature references to the different topics covered. Most references are simply listed, not discussed in the text of the chapter.

Chapters 2 and 3 constitute the *pièce de résistance* of the book. The first of the two is an authoritative review of the main methods of residue-specific modification of proteins. While original literature sources are extensively referenced for all the methods described, in my opinion the chapter would have been improved if, rather than the general discussion provided, some experimental procedures were recommended for the benefit of nonspecialists venturing into this field. This applies to other sections too, particularly sample preparation and prefractionation (Chapters 4–5, see below). Another aspect of this chapter, indeed of the entire book, that could have been improved is the representa-