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BOOK REVIEW

Protein Purification Protocols

(2nd Edn. (Cutler, P., ed.) in *Methods in Molecular Biology* (Walker, J., ed.), Vol. 244, Humana Press, 2004, 484 p., $115)

Almost decade passed since publication of the first edition of this book (1996). During this period significant changes in protein purification methods have occurred. So, many researchers studying proteins appreciate the issue of the second edition of *Protein Purification Protocols*, which has become a handbook in many laboratories.

The book consists of 44 chapters written by international groups of distinguished experts in protein purification. Chapters 1-5 give descriptions of general strategy of protein purification and preparation of extracts from animal and plant tissue, bacteria, and fungi. Chapters 6 and 7 describe methods of subcellular fractionation of animal and plant tissue extracts. Chapter 8 describes methods of enzyme extraction from plant tissues using phenolic compounds. Chapters 9 and 10 deal with methods preventing proteolysis and also methods of protein concentration. Chapter 11 describes preparation of protein extracts of certain pH and also changes of pH buffers.

Protocols of protein purification and concentration by means of ultrafiltration and initial steps of purification by fractional precipitation are given in chapters 12-13.

Chapters 14-28 deal with various chromatographic methods used for protein purification. These include ion-exchange and hydrophobic chromatography, affinity chromatography, separation and purification of proteins using specific lectins, immunoaffinity chromatography, chromatofocusing, isoelectrofocusing, and other highly effective methods of protein purification and analysis.

Chapters 29-31 describe methods of purification of membrane proteins and their separation from detergents in the final steps. Special chapters deal with protein lyophilization (chapter 32) and storage of purified proteins (chapter 33).

Chapters 34 and 35 deal with methods of blotting and elution of proteins from polyacrylamide gels. Chapters 36 and 37 describe analysis of protein purification degree by means of 2D gel electrophoresis and isoelectrofocusing.

Chapters 38-44 summarize information on the most effective methods of analysis (e.g., multimer liquid chromatography, mass spectrometry, etc.) of purification factor and structure of proteins including proteins used as therapeutic agents.

Each chapter gives a description of the principles of the method, a list of materials required for its realization, sequential steps of the method, and also comments to each step and bibliography.

Thus, this book will help readers easily duplicate the methods considered in this book in laboratory practice.

This book will be very useful for researchers working in the fields of protein chemistry, biochemistry, proteomics, and biotechnology.

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