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BOOK REVIEW

Membrane Protein Protocols. Expression, Purification, and Characterization

(Selinsky, B. S., ed., in Series "Methods in Molecular Biology", Series Editor J. Walker, Vol. 228, Humana Press, 2003, 334 p., $99.50)

This book includes descriptions of modern methods employed for studies of membrane proteins. The functional importance of these proteins cannot be overestimated. These proteins act as cell receptors, enzymes, and molecules triggering various metabolic processes. Membrane proteins are involved in intercellular interactions, and they also determine antigenic properties and many other biological processes. The study of membrane proteins is the most difficult part of proteomics, and it requires the use of complex special methods.

The book consists of four sections that include 25 chapters written by a representative international group of authors. Section I of this book deals with problems of expression of membrane proteins. Seven chapters of this section describe methods employed for studies of expression and purification of rabbit cytochrome b_5, dehydrogenase, and heterologic membrane proteins expressed in *E. coli* cells. Several chapters of this section also describe methods used for study of expression and isolation of membrane-bound FeS-proteins, rhodopsin, and other membrane proteins.

Section II of this book describes selection of detergents for purification of membrane proteins. Three chapters consider various approaches for solubilization of membrane proteins, their purification, and reconstitution of tertiary structure. This section contains protocols for preparation of soluble forms of chemokine receptors and lysophospholipid acyl-CoA acyl transferase.

Section III is the largest part of the book; it consists of 13 chapters that highlight methods for purification and reconstitution of membrane proteins. It includes protocols for purification of microbial Om50 protein, melanocortin-5 receptor, mammalian serine palmitoyl transferase, phosphatidylglycerophosphate synthase, pancreostatin receptor, zinc transporters, and other membrane proteins.

Section IV includes descriptions of methods of structural analysis of membrane proteins using the bacteriorhodopsin crystal as an example, and description of biosensor analysis employed for structural studies of membrane proteins.

Besides the evident methodological direction, this book gives a brief introduction into problems related to studies of membrane proteins.

Each chapter contains descriptions of principles of considered methods, lists of chemicals required for use of these methods, sequential steps of these methods, remarks on each step, and a bibliography.

I believe that this book will be useful for biochemists, membranologists, biotechnologists, and also for specialists in proteomics.

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