

Membrane Proteins in Aqueous Solutions: From Detergents to Amphipols (Biological and Medical Physics, Biomedical Engineering)

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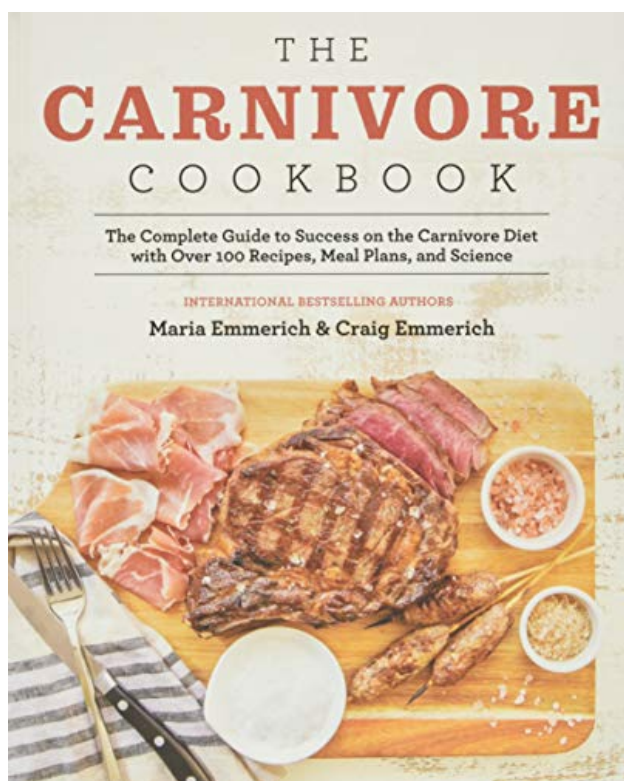
SKU: 9783319731469

Price: \$5,879.79

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Product Description

This book is the first to be entirely devoted to the challenging art of handling membrane proteins out of their natural environment, a key process in biological and pharmaceutical research, but one plagued with difficulties and pitfalls. Written by one of the foremost experts in the field, *Membrane Proteins in Aqueous Solutions* is accessible to any member of a membrane biology laboratory. After presenting the structure, functions, dynamics, synthesis, natural environment and lipid interactions of membrane proteins, the author discusses the principles of extracting them with detergents, the mechanisms of detergent-induced destabilization, countermeasures, and recent progress in developing detergents with weaker denaturing properties. Non-conventional alternatives to detergents, including bicelles, nanodiscs, amphipathic peptides, fluorinated surfactants and amphipols, are described, and their relative advantages and drawbacks are compared. The synthesis and solution properties of the various types of amphipols are presented, as well as the formation and properties of membrane protein/amphipol complexes and the transfer of amphipol-trapped proteins to detergents, nanodiscs, lipidic mesophases, or living cells. The final chapters of the book deal with applications: membrane protein in vitro folding and cell-free expression, solution studies, NMR, crystallography, electron microscopy, mass spectrometry, amphipol-mediated immobilization of membrane proteins, and biomedical applications. Important features of the book include introductory sections describing foundations as well as the state-of-the-art for each of the biophysical techniques discussed, and topical tables which organize a widely dispersed literature. Boxes and annexes throughout the book explain technical aspects, and twelve detailed experimental protocols, ranging from in vitro folding of membrane proteins to single-particle electron cryomicroscopy, have been contributed by and commented on by experienced users. *Membrane Proteins in Aqueous Solutions* offers a concise, accessible introduction to membrane protein biochemistry and biophysics, as well as comprehensive coverage of the properties and



The Carnivore Cookbook

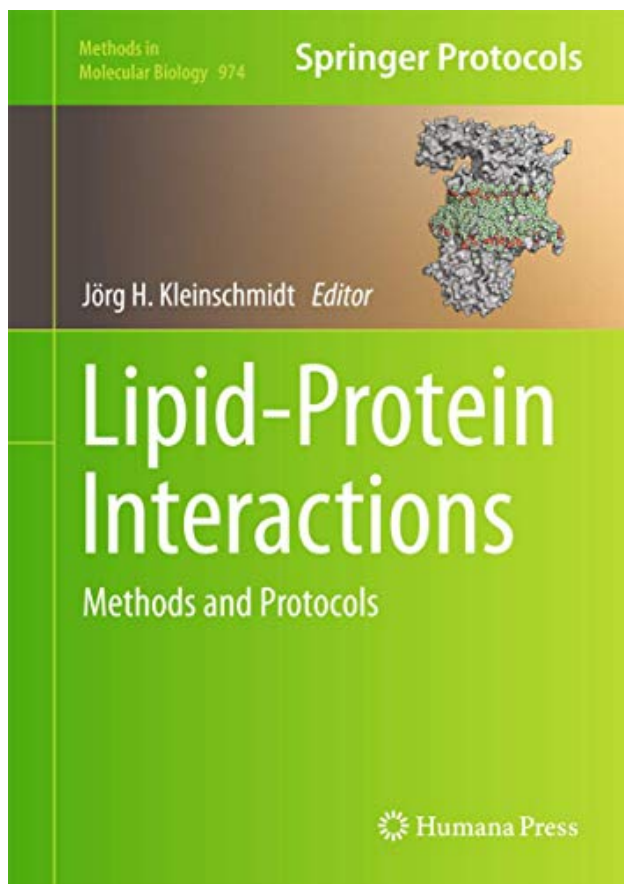
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Product Description



Lipid-Protein Interactions: Methods and Protocols (Methods in Molecular Biology, 974)

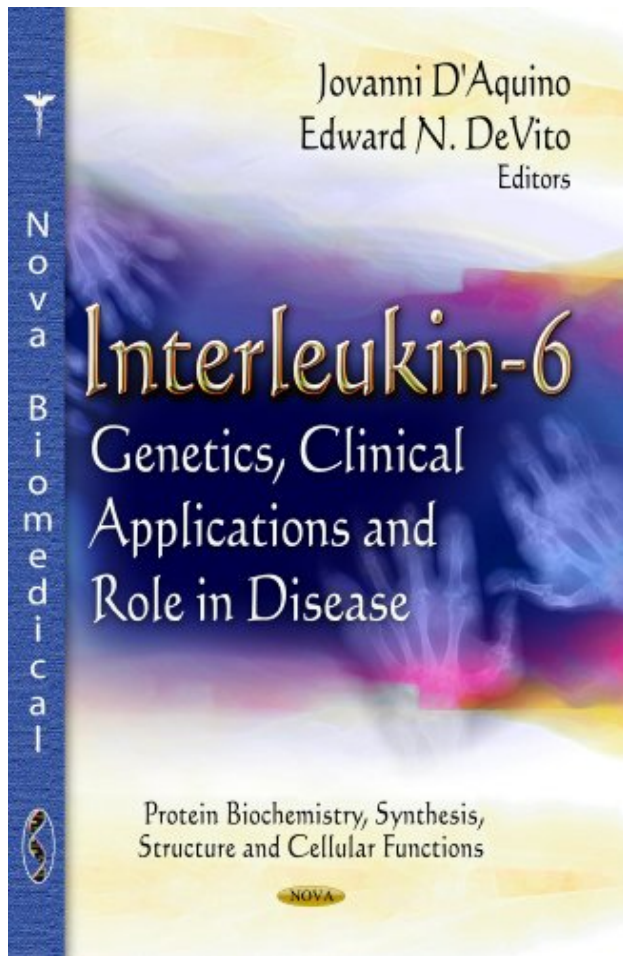
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Biological membranes are the essential structuring elements of all living cells. Many enzymatic reactions take place at the membrane-water interface. To gain detailed insight into membrane properties, it is therefore of great importance to understand the complex nature of the interactions of membrane proteins with lipids. Lipid-Protein Interactions: Methods and Protocols provides a selection of protocols to examine protein-lipid interactions, membrane and membrane protein structure, how membrane proteins affect lipids and how they are in turn affected by the lipid bilayer and lipid properties. The methods described here are all actively used, complementary, and necessary to obtain comprehensive information about membrane structure and function. They include label-free approaches, imaging techniques and spectroscopic methodologies. Written in the successful Methods in Molecular Biology (TM) series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible protocols, and notes on troubleshooting and avoiding known pitfalls. Authoritative and easily accessible, Lipid-Protein Interactions: Methods and Protocols seeks to serve both professional and novices with its wide range of the methods frequently used in this area of research.



Interleukin-6 (Protein Biochemistry, Synthesis, Structure and Cellular Functions: Immunology and Immune System Disorders)

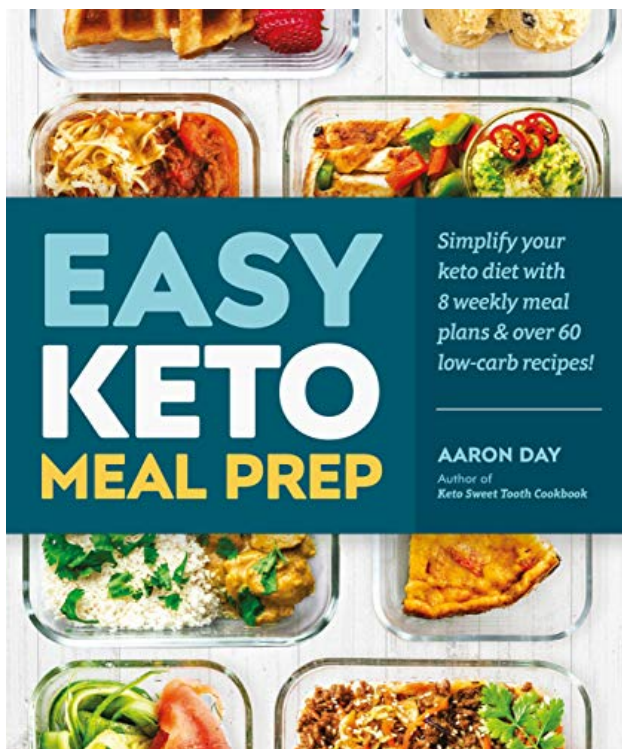
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Interleukin-6 (IL-6) is a pleiotropic cytokine that plays an important role in acute inflammation. It is secreted by T cells and macrophages during infection and after trauma. It is responsible for activation of B cells and other immune cells. In this book, the authors discuss the genetics, clinical applications and role in disease of interleukin-6. Topics include IL-6 inhibitors as novel generation of treatment strategies; the role of interleukin-6 in postoperative delirium; elevated interleukin-6 levels as a consequence of obesity and insulin resistance; the effects of IL-6 on respiratory mechanics in rats; and IL-6 targeting strategy for rheumatoid arthritis and various immune-mediated diseases.



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Product Description
