getting started in systems biology research. The book is formatted into three parts. These are general introduction, standard model and approaches in systems biology and computer-based information retrieval and examination. The authors also demonstrate how mathematical concepts can illuminate the principles underlying biology at a genetic, molecular, cellular and organism level, and how to use mathematical tools for analysis and prediction.

In the first part, an introduction is given to indicate the three main foundations of systems biology, which are cell biology, mathematics and experimental techniques. They are very basic principles for readers. The second part mainly presents current strategies of computational modeling and mining. So different concepts of modeling and how this model can be used are introduced here. Metabolism, signaling, cell cycle and gene expression and interaction between these processes are detailed in this part. The third part gives a brief introduction on available help and resources from the recent Internet information. An overview is also given on databases here, which are indispensable for information exchange and constitute an important support for system biology. *Systems Biology in Practice* is a useful book, which combines in comprehensible form, the basic principles with advanced studies of the subject material.

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L. K. Tamm (Ed.), Protein-Lipid Interactions: From Membrane Domains to Cellular Networks, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Germany, 2005 (xxvi + 444 pp., £105.00, ISBN 3-527-31151-3)

Cell membranes are arguably the most important components that perform number of essential functions such as transport of nutrients, ion conduction, photosynthesis, respiration and ATP synthesis, signal transduction, vision, hearing, cell migration, fertilization and development, etc. Biological membrane has been considered as a two-dimensional liquid consisting of lipid bilayer and embedded in the fluid lipid bilayer are proteins of various shapes and traits. Even though the basic structure of membranes has been discovered many years ago, more recent research has considerably refined the early "fluid mosaic" model of the structure of biomembranes.

Protein–Lipid Interactions describes the interactions between proteins and lipids that make the fabric of biological membranes from every angle. It examines the relevant thermodynamic and structural issues from a basic science perspective to biochemical and cell biological processes. The major building blocks of membrane proteins are α-helices and β-sheets and the generation and insertion of these elements of secondary structure are given in the chapter 1–3 of Part1. Chapter 4 summarizes the post-integration misassembly of membrane proteins and disease. In Part 2, chapter 5 describes the census of ordered lipids and detergents in X-ray crystal structures of integral membranes proteins. Nuclear magnetic resonance (NMR) offers unique opportunities to study the interactions of membrane proteins with disordered lipids and detergents in fluid states. Chapter 6 reviews the measurements of these interactions that have been or potentially could be achieved using solution NMR techniques.

Many bacteria secrete polypeptides with intrinsic properties that generate a remarkably wide range of stable structural states designed to form a hole in cellular membrane. Many diseases are caused due to these protein toxins that cross the cell membranes to reach their point of action. Part 3 is focussed on the membrane penetration by toxins, which include lipid interaction of α-helical protein toxins, membrane recognition and pore formation by bacterial toxins, and mechanism of membrane permeation and pore formation by antimicrobial peptides.

Cell fusion is a key stage of many fundamental developmental processes such as fertilization, placentation, myogenesis and osteogenesis. Part 4 discusses the mechanisms involved in membrane fusion including cell fusion in development and disease, molecular mechanisms of intracellular membrane fusion, and interplay of proteins and lipids in virus entry. Protein-lipid interactions in the formation of raft microdomains in biological membranes, and protein-lipid partitioning in locally heterogeneous model structures have been discussed in Part 5. The chapters in final part of the book describe how different protein modules are recruited and bind to membrane surfaces.

Numerous figures throughout this volume provide excellent illustrative material to support the detailed information presented in the text. In conclusion, this comprehensive volume is highly recommended to all the persons working in this exciting area.

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