

Book review

Topics in Lipid Research: From Structural Elucidation to Biological Function:
edited by R. A. KLEIN AND B. SCHMITZ, The Royal Society of Chemistry,
Burlington House, London, 1987, xii + 336 pages, \$65.00, £ 37.50.

Topics in Lipid Research derives from a meeting held in Cambridge in 1986 concerning the interrelationship between structure and function for lipid molecules. The editors selected a number of aspects of lipid chemistry and biochemistry for inclusion in this volume, based on their personal interests. The areas chosen were: platelet activating factor, eicosanoids, glycolipids, membrane structure and function, environmental adaptation of membranes, and anesthetics and membrane probes. With the exception of probes and anesthetics, topics are treated by a combination of review articles and more-detailed research papers; anesthetics and probes are treated as the transcribed record of a round-table discussion. The book is approximately equally divided between the six areas of research.

Topics for PAF (a mixture of so-called "1-*O*-alkyl-2-acetyl-*sn*-glycero-3-phosphocholines") include: synthesis of PAF and its analogs and analog activities, PAF-receptor studies, PAF biosynthesis, and platelet responses to PAF. A similar set of topics is found in the chapters dealing with eicosanoids (prostaglandins, prostacyclins, and thromboxanes), plus a chapter on mass-spectrometric analysis of lipoxygenase products.

The section on glycolipids is divided between several chapters on the analysis, chemistry, and immunochemistry of the glycolipid from *Mycobacterium leprae*, structural studies of the glycans from the parasitic protozoan *Trypanosoma brucei*, and the enzymology of, and conformational studies on, glycosphingolipids.

The section on membrane structure and function is dominated by physical-chemical studies of membranes — F.t.-i.r., n.m.r., and fluorescence-spectroscopic studies, kinetic studies of flip-flop rates between membrane layers, ion-transport across erythrocyte membranes, and artificial, lung-expanding compounds. Additional chapters in this section describe the reconstitution of membrane proteins into lipid vesicles, and the role of lipids and proteins in the structure and function of photosynthetic membranes. The final section of the book discusses changes in the chemical structure of membrane components to handle environmental stresses, such as arise from extremes in temperature (both high and low) or pressure.

The chapters in this book are, in general, well written and adequately illustrated (structural formulae, biochemical pathways, spectroscopic tracings, and assorted graphs). Chapters usually contain an adequate number of literature references, and even the round-table discussion contains a limited number of leading references at its end. Overall, it is a worthwhile volume that should serve to initiate interest in a number of areas of lipid research.

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