

Book review

Fluorinated Carbohydrates: Chemical and Biochemical Aspects; edited by N. F. Taylor, ACS Symposium Series 374, American Chemical Society, 1155 16th Street, N.W., Washington, D.C. 20036, 1988, x + 213 pages, \$ 49.95 (North America), \$ 59.95 (abroad).

This book was developed from a symposium sponsored by the Division of Carbohydrate Chemistry of the American Chemical Society and held in August–September 1987. It consists of 11 chapters (presumably up-dated at submission early in 1988) surveying then-recent studies in the synthesis, reactivity, and biochemical behavior of fluorinated carbohydrates. An introductory chapter by Kent highlights the history of this field, and points to prospects for future developments (67 references). Randall and Nicolaou describe the preparation and chemical properties of glycosyl fluorides, and their uses in glycoside and oligosaccharide synthesis, and Sharma *et al.* outline various methods for chemical synthesis of fluorinated hexoses, hexosamines, and *N*-acetylneuraminic acid as analogs of cell-surface carbohydrates, and report on antitumor activities for a number of them.

The chemoenzymic synthesis of fluoro sugars is discussed by Wong *et al.*, and fluorinated analogs of *myo*-inositol as biological probes of phosphatidylinositol metabolism are treated by Moyer *et al.* Further extensive studies on enzyme specificity, metabolism, and sugar transport, using deoxyfluoro carbohydrates (including ^{18}F derivatives) as probes, are presented in chapters by Withers *et al.*, Taylor *et al.*, Hitz, and Gatley *et al.* Glaudemans and Kováč discuss in depth the chemical synthesis of a series of D-galacto-oligosaccharides and specifically monofluorinated derivatives, and their use to unravel details of antigen binding to antigalactan monoclonal immunoglobulins. Fox *et al.* evaluate antiviral activities of 2'-fluorinated arabinosylpyrimidine nucleosides.

The contributors to this volume are leaders in a rapidly expanding field of growing significance, and most of the currently important focal points of activity have been covered very well. An exception is the ^{19}F -n.m.r. spectroscopy of fluoro sugars; however, this has been treated excellently by Csuk and Glänzer in *Adv. Carbohydr. Chem. Biochem.*, 46 (1988) 73–177. The book has a 5-page Subject Index, and an average of 50 literature references per chapter are cited. It is an excellent guide for all wishing to familiarize themselves with recent achievements and current trends in the chemistry and biochemistry of fluorinated carbohydrates.

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