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Book Review

Carbohydrate Biochemistry with Clinical Correlations

by Fred K Rodrigues

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The science of carbohydrates and of biomolecules containing them has, during the past quarter century, come a long way from the concept of a sticky and slimy sugar part with hardly any function except perhaps affecting the solubility of their conjugates, to the present day realization that the sugar sequences, combined with their anomeric variations offer a bewildering variety of epitopes which take part in most biological processes from fertilization through differentiation, development, immune recognition lymphocyte homing to apoptosis. The articles and journals in carbohydrate biology have kept nearly the same pace as have those in molecular biology. One expects an exposure to these exciting areas in carbohydrate biochemistry in a book written in 1997 for students including post graduate and resident students.

"Carbohydrate Biochemistry with Clinical Correlations" by F K Rodrigues could have been termed comprehensive but for the giant strides of this science mentioned above. One wishes, for example, the treatment of the evidently important blood group substances were more detailed and modernized than the half page note given without figures illustrating the blood group antigen sugar structures. The function of oligosaccharides on glycoproteins as recognition sites extends a great deal beyond mannose-6-phosphate. It also follows that statements such as "Carbohydrates generally seem to have little effects on the biochemical properties of proteins they form part of" need reconsideration. At least the historic works of Ashwell and Morell, not to speak of greater breakthroughs thereafter, demand as much. In the physiological context, which this book purports to address, protein conformation, solubility, stability, location, recognition etc, which decide the functions of glycoproteins are all modulated by sugar appendages.

Nevertheless, this book provides a thorough treatment on the classical carbohydrate biochemistry including their biosynthetic and catabolic pathways. One commendable feature is the correlation of each metabolic pathway or glycoconjugate with disease condition in which its aberration may be causative. Though a glossary, an essential feature for a book of this sort is lacking, the text can take pride in its lucid prose and avoidance of typographical errors.

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