

## Book review

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*Proteoglycans—Biological and Chemical Aspects in Human Life*: by JOHN F. KENNEDY, Elsevier Scientific Publishing Company, Amsterdam, 1979, ii + 490 pages, US \$80.50, Dfl. 165.00.

This book is a comprehensive treatise on proteoglycans that provides a balanced review of historical development, structure, function, separation and isolation, enzymic degradation, chemical modification, and disease processes. Systematic nomenclature for the carbohydrates as recommended by the International Union of Pure and Applied Chemistry is used throughout, and an explanation of the application of these rules to glycosaminoglycans is lucidly provided early in the book.

The text is scientifically sound, with the following exceptions. The author provides an as-yet-unwarranted legitimacy to hyaluronate-protein as a proteoglycan (on pages 61, 62, 92, and 94), although later (page 143) he remarks that more investigation is needed to clarify the situation. The use of the term “random arrangement of amino acids” (page 17) in describing the sequence of amino acids in proteoglycans is not justified, and may mislead the novice to infer the absence of an mRNA for the protein core. Perhaps he intended to convey that repeating sequences of amino acids are not present, but even this description would be incorrect, because firm data on sequences are not yet available. The suggestion that the low viscosity of heparin solution accords with its anticoagulant activity (page 63) is not particularly enlightening, and may be misleading to the individual who is seeking to understand the mechanism of action of heparin in the control of blood clotting.

The style of writing is generally good, but an occasional lapse in grammatical usage is present. The author writes (page 383) “infusion of a case of the Hurler syndrome” and “whole blood transfusion of cases of Hurler, Hunter and Sanfilippo syndromes”. Clearly, one does not infuse or transfuse cases, but, rather, a patient receives an infusion or a transfusion. He uses the term de-bonding agent (page 89), presumably as jargon for a chemical agent that breaks hydrogen bonds, hydrophobic bonds, or salt linkages. He writes “departmental cellular effects” (page 301), where, presumably, he intends compartmental effects. The book is relatively free from typographical errors. Documentation is of a high quality, and the references are given with full titles and inclusive pages. The literature cited extends through 1976, with only a handful of references to 1977, and the references to 1978 are solely to those by Kennedy. The structural formulas and Figures are presented clearly, and the electron micrographs of proteoglycans are readily interpretable. The organization of much information into Tables with accompanying references is a particularly useful feature.

Insufficient guidance is provided in this book to satisfy the needs of the novice

adequately, as may be gleaned from the following examples. In discussing measurement of hexuronic acids, Kennedy writes (pages 106) that different color-yields are given by D-glucuronic acid and L-iduronic acid in the carbazole-sulfuric acid assay, and also that the orcinol-sulfuric acid assay is of value; but he does not indicate which acid gives an increased color-yield in the respective assays. Similarly, with respect to sulfate analysis, he writes (page 102) that *N*-sulfate groups are more susceptible to acid hydrolysis than *O*-sulfate groups, and he then gives the conditions for releasing *O*-sulfate, but does not specify conditions for releasing the *N*-sulfate. The discussion of preparative procedures for the isolation of proteoglycans is somewhat terse, and it would have been helpful had an ultracentrifuge pattern or column-chromatography elution-diagram been given, to aid the reader's perception of the separations achieved.

This work is appropriate for university libraries, and for the specialist who can afford it and desires to have a well produced, nicely bound, reference book. As this field has advanced rapidly since early 1977, the reader will need to supplement this treatise with more-recent reviews.

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