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## Book Review

**Iozzo RV, editor: *Proteoglycans: Structure, Biology, and Molecular Interactions*, 422 pp, New York, Marcel Dekker, Inc., 2000 (\$185).**

Even current pathology literature abounds with unfortunate references to mucosubstances or to ground substance. Decades ago that was, perhaps, a defensible way to avoid immersion into a complex topic fraught with unknowns and confusion. The combination of advances in cell and molecular biology has removed the veil of confusion that covered those molecules containing complex carbohydrates (mucosubstances), making proteoglycans and glycosaminoglycans as amenable to study as proteins or any other class of biologic molecules. This first-rate volume does a commendable job in summarizing, in a clear, lucid, and understandable manner, the current knowledge in the field of proteoglycans.

The editor and the 31 authors of this excellent volume deserve congratulations. The 15 book chapters cover all major proteoglycans with clear and up-to-date information on their chemical structure, biosynthesis, catabolism, interactions with the extracellular matrix, cell membranes, cytokines, and the myriad of biologic functions possessed by these fascinating molecules. There are abundant diagrams that help clarify points and solidify information. The only

criticism, and it is a minor one, is the lack of a short introduction clarifying the nomenclature. Initially proteoglycans were named by their constituent glycosaminoglycan chains: thus, chondroitin sulfate, heparan sulfate, etc. Later, it was realized that similar glycosaminoglycan chains could be attached to different proteins, and a qualification was introduced: basement membrane heparan sulfate, cell membrane heparan sulfate. After the isolation of the genes coding for the different core proteins, the excellent decision was made to name the proteoglycans according to the gene product: thus, perlecan, syndecan, etc. To those not following the literature on a regular basis, the nomenclature may introduce some difficulty. Nevertheless, this is a minor point and after reading a few chapters the problems disappear. This book can be enthusiastically recommended, not only to those interested in proteoglycans, but also to all concerned with the extracellular matrix and cell biology. In particular it would be helpful to pathologists and may, perhaps, help to stamp out the old term mucosubstances.

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