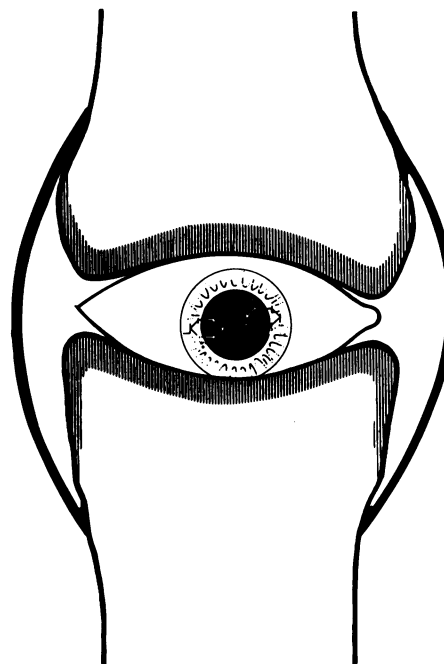


# KERATAN SULPHATE

Chemistry, Biology,  
Chemical Pathology

Edited by

HELMUT GREILING  
&  
JOHN E. SCOTT



Keratan sulphate is unique, standing at a crossroads, sharing the potential of both typical glycoproteins and typical proteoglycans. In one direction lie immunology, cell development and oncogenesis; in the other, important roles in the ultrastructure and function of cornea, joints and intervertebral discs. This book, the first in the field, is the fruit of the first full international symposium on keratan sulphate. The challenge of new viewpoints produced controversy, but also much common ground; this is revealed by the edited discussions, grouped for continuity, which follow the main sections. The bibliography is collected into one section, providing much of the literature on keratan sulphate in one place.

**Contents:** **PART I - CHEMISTRY:** Structure of keratan sulphate proteoglycans: core proteins, linkage regions, carbohydrate chains (*Stuhlsatz, Keller, Becker, Oeben, Lennans, Fisher & Greiling*); Structural and conformational analysis of keratan sulphate oligosaccharides and related carbohydrate structures (*Hounsell*); Discussion. **PART II - IMMUNOLOGY:** Keratan sulphate oligosaccharides, members of a family of antigens of the poly-N-acetyl-lactosamine series (*Feizi*); Studies of keratan sulphates of aorta and cartilage utilizing MAb 6D2 (*Baker*); Detection and purification of corneal keratan sulphate proteoglycan from non-corneal tissues (*Funderburgh & Conrad*); Discussion. **PART III - BIOSYNTHESIS:** Biosynthesis of skeletal and corneal keratan sulphate (*Balduini, De Luca & Castellani*); Keratan sulphate proteoglycans: chemistry and biosynthesis of the linkage regions (*Hascall & Kimura*); Discussion. **PART IV - REGULATION OF BIOSYNTHESIS:** Factors affecting the pathway for the biosynthesis of keratan sulphate (*Mason & Sweeney*); Sulphation, chain elongation and chain termination in keratan sulphate biosynthesis (*Keller, Stuhlsatz & Greiling*); Keratan sulphate: a functional substitute for chondroitin sulphate in O<sub>2</sub>-deficient tissues? (*Scott, Stockwell, Balduini & De Luca*); Discussion. **PART V - DEGRADATION:** Substrate specificity of keratan sulphate-degrading enzymes (endo- $\beta$ -galactosidase, keratanase and keratanase II) from micro-organisms (*Nakazawa, Ito, Yamagata & Suzuki*); Degradation of keratan sulphate proteoglycans (*Kresse*); Discussion. **PART VI - KERATAN SULPHATE IN THE TISSUES:** The chemical morphology of keratan sulphate proteoglycans (*Scott*); Articular cartilage keratan sulphate: maturation, ageing, biomechanical and scale effects (*Stockwell*); Proteoglycans of mammalian corneal stroma (*Damle & Gregory*); Discussion; Developmental aspects of keratan sulphate (*Cintron, Covington, Kublin, Gregory & Damle*); Keratan sulphate proteoglycans in organ and cell culture (*Dahl*); Discussion. **PART VII - CHEMICAL PATHOLOGY:** Studies of the metabolism of keratan-sulphate-bearing proteoglycans of cartilage (*Thonar, Williams, Sweet, Maldonado, Lenz, Schnitzer & Kuetner*); Serum keratan sulphate in rheumatoid arthritis and different clinical subsets of osteoarthritis (*Seibel, Towbin, Braun, Kiefer, Müller & Paulsson*); Factors affecting the determination of keratan sulphate using monoclonal antibodies in immunoassay procedures (*Caterson, Brooks, Sattangi, Ratcliffe, Hardingham & Muir*); Discussion; Alterations in the synthesis of keratan sulphate proteoglycan in corneal wound healing and in macular corneal dystrophy (*Hassell, SundaRaj, Cintron, Midura & Hascall*); Distribution of keratan sulphate-containing proteoglycans in human aorta and their possible role in the calcification of aorta (*Greiling, Löffler & Stuhlsatz*); Discussion. *Bibliography. Index.*

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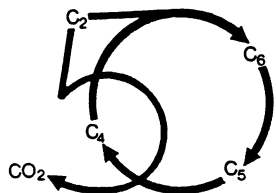


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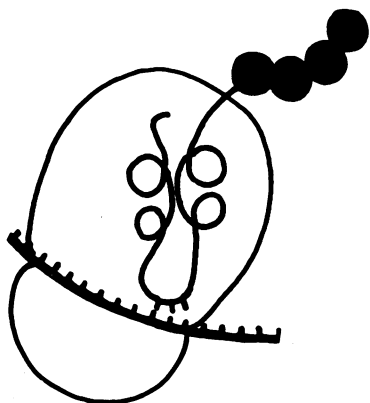
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