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Nota di contenuto	Chapter 1: Heparan Sulfate Proteoglycans in the Stem Cell Niche: Lessons from Drosophila -- Chapter 2: Proteoglycans in zebrafish development -- Chapter 3: The pivotal role of versican turnover by ADAMTS proteases in mammalian reproduction and development -- Chapter 4: Use of chondroitin sulfate to aid in vitro stem cell differentiation -- Chapter 5: Regulatory functions of heparan sulfate in stem cell self-renewal and differentiation -- Chapter 6: Proteoglycans as mediators of neurogenesis and stem cell differentiation -- Chapter 7: Syndecan-3: a signaling conductor in the musculoskeletal system -- Chapter 8: Proteoglycans of the neural stem cell niche -- Chapter 9: Heparan sulfate in normal and cancer stem cells of the brain -- Chapter 10: Hyaluronic acid-CD44 interaction in the physio- and pathological stem cell niche -- Chapter 11: Proteoglycans in glioma stem cells -- Chapter 12: Role of Syndecan-1 in Cancer Stem cells.

Sommario/riassunto

This book provides a state-of-the-art compendium on the role of proteoglycans and glycosaminoglycans during development and in cancer. It also suggests directions for novel therapeutic and biotechnological applications in stem cell biology. Proteoglycans and glycosaminoglycans, as part of the extracellular matrix, are multifunctional modulators of growth factor, cytokine, integrin and morphogen signaling, which determine both self-renewal, senescence and/or differentiation of stem cells during development. Since proteoglycans modulate cell adhesion and migration they are important organizers of the extracellular matrix within the proper stem cell niche. A malfunctioning of proteoglycans and glycosaminoglycans contributes to the cancer stem cell phenotype, which is linked to therapeutic resistance and recurrence in malignant disease. This book is essential reading for anyone interested in the extracellular matrix and its role in development. The series Biology of Extracellular Matrix is published in collaboration with the American Society for Matrix Biology.