

The sulfation degree of membrane-associated proteoglycan from a hemopoietic cell line is determined by changes in the growth state of the cell

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Multipotential hemopoietic progenitor cells (FDCP-mix) proliferate in culture medium supplemented with horse serum. When transferred to a medium without serum, cells do not proliferate and enter a quiescent state. Both proliferative and quiescent cells synthesize only chondroitin sulfate proteoglycan (CS-PG) which is associated to the cell membrane. Incorporation of ³⁵S into CS-PG was 4-fold higher in quiescent than in proliferative cells. Flow cytometric studies using monoclonal antibodies which recognize the core protein or the CS chains, showed that the increased uptake of sulfate was not the consequence of an increase in the abundance of CS-PG. Further characterization demonstrated that CS-PG isolated from quiescent cells exhibited a slightly higher hydrodynamic size than CS-PG from proliferative cells. However, the glycosaminoglycan chains from PG derived from proliferative and quiescent cells have the same hydrodynamic size. Through ion-exchange chromatogr