HYDROLYSIS OF HEPARINS BY IMMOBILIZED SULFATASE IN FERROMAGNETIC DACRON

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Sulfated Glycosaminoglycans are important in several biological processes. Heparin biological activities are regulated by the interaction of heparin with heparin-binding proteins. The preparation of modified oligosaccharides using arylsulfatases (ARSs) and other enzymes would change the interaction of heparin with specific proteins and thus theirs properties. Arylsulfatase from the liver of *Aplysia cervina* was purified and enzyme activity determinated. This ARS was covalently immobilized on ferromagnetic Dacron yielding a derivative with 3.17 units/mg protein and retained 36.25% of the soluble enzyme activity. This preparation was removed from the reaction mixture by a magnetic field and assayed with commercial heparins: Clexane and Liquemine. The assays were realized for 4 days at 37°C and the results was obtained using electrophoresis in agarose gel. The soluble ARS showed activity on Liquemine and Clexane after 48h of assay, but the enzyme presented great activity on Clexane. The immobilized ARS showed activity on Clexane after 4 days of assay, but not presented activity on liquemine. This immobilized sulfatase can be used among many applications to remove sulfate groups from glycosaminoglycans, sulfated bile acids and drugs and to produce desulfo-glucosinolatos from plant compounds for animal feed.

Keywords: Glycosaminoglycans, Sulfatase, Ferromagnetic Dacron and Heparins.