

Oligosaccharide Mapping of Chondroitin Sulfate Obtained from Different Animal Sources

Esteban P. FUENTES * & Víctor B. DIAZ

Syntex S.A., Prayones y Avellaneda, Luis Guillón (1838), Argentina

SUMMARY. Oligosaccharide mapping (chondroitinase ABC enzymatic cleavage and further ion exchange chromatographic analysis of the resulting oligosaccharides) on twelve chondroitin sulfate samples isolated in our laboratory from different animal sources was performed. The same analytical methodology was applied on five commercial chondroitin sulfate samples taken as reference materials. The results were compared with bibliographic data. The usefulness of the described methodology in identifying the animal and tissular source was analyzed.

RESUMEN. "Caracterización mediante mapeo oligosacárido de condroitín sulfato obtenido de diferentes orígenes animales". Se realizó el mapeo oligosacárido (degradación enzimática con chondroitinasa ABC y posterior análisis cromatográfico por intercambio iónico de los oligosacáridos resultantes) de doce muestras de condroitín sulfato de diversos orígenes animales obtenidas en nuestro laboratorio y de cinco muestras comerciales tomadas como sustancias de referencia. Se compararon los resultados obtenidos con la bibliografía y se analizó la utilidad de la técnica empleada con el fin de identificar el origen animal y tisular.

INTRODUCTION

Chondroitin sulfate is a glycosaminoglycan sulfate widely spread in the Animal Kingdom. It is a part of connective and structural tissues and, so, it is mainly found in soft cartilages and articular connections. Its molecule is mainly composed by the repetition of a disaccharide unit formed by N-acetyl-galactosamine and an uronic acid (glucuronic, and in a lower extension, iduronic). The union of these disaccharides conform linear polymers of 20 - 50 kDa mean molecular weight¹.

In the therapeutical field, its principal application is in the treatment of arthropathies and articular degenerative complications¹, osteoporosis treatment, hy-

PALABRAS CLAVE: Caracterización, Condroitín sulfato, HPLC, Mapeo oligosacárido.

KEYWORDS: Characterization, Chondroitin sulfate, HPLC, Oligosaccharide mapping.

* Author to whom correspondence should be addressed