

A NOVEL CHONDROITIN SULFATE E ISOFORM FROM THE SHRIMP *L. SCHIMITTI*

Lima, M.A¹, Santos, V.O¹; Brito, A.S¹, Arimateia, D.S.¹, Souza, L.S.¹, Andrade, G.P.V¹; Evangelista, I.W.V¹; Leite, E.L.; Torri, G² and Chavante, S.F¹

¹ Depto. de Bioquímica, UFRN ² Istituto Scientifico di Chimica e Biochimica G. Ronzoni, Milan, Italy

Oversulfated Chondroitin Sulfate (CS) isoforms were originally discovered in cartilages of shark and marine invertebrates being further discovered in human rib cartilage. Here we report the occurrence of a CS-E isoform in the shrimp *L. Schmitti*, which is largely found on the Northeast coast of Brazil. The CS-E isoform was isolated from the shrimp tissue by proteolysis, complexation with ion-exchange resin, followed by fractional precipitation with acetone and purification by DEAE-Sephacel. Structural analysis of shrimp CS-E isoform, performed by its enzymatic depolymerization by chondroitin ABC as well as mono and two-dimensional nuclear magnetic resonance (NMR) spectroscopy revealed that the shrimp CS-E contains mainly disulfated disaccharides with N-acetyl galactosamine 4,6-O-sulfate residues. Furthermore, characteristic signals for 2-O-sulfated glucuronic residues were identified. We also studied its effect on the leukocyte migration using a peritonitis model in rats. Treated animal with the shrimp CS-E isoform in the proportion of 15mg/kg showed reduction in the cellular infiltration and total protein level in the peritoneal lavage, however no qualitative cellular composition change was observed. These results suggest that the shrimp CS-E isoform reduces the inflammatory response but further studies are necessary to understand its role in the molecular mechanism of an inflammatory response.

Supported by: CNPq and Funpec

Key words: Chondroitin Sulfate, inflammatory response and sulfated polysaccharides.