

ADVANCES ON THE STRUCTURAL MUCINS OF THE *ECHINOCOCCUS GRANULOSUS* LAMINATED LAYER

Cecilia Casaravilla^{1*}, Silvia Soulé^{2*}, Lucía Mendonça-Previato³, José Previato³,
Fernando Ferreira² & Alvaro Díaz¹.

(*) Equal contributions

¹Inmunología/Dept. Biociencias, F.Química, UdelaR, Montevideo, Uruguay. ²Lab. Carbohidratos/Glicoconjugados, DPDB/F.Medicina, IQB/F.Ciencias, UdelaR, Montevideo. Uruguay. ³Lab. Glicobiología/IBCCF, UFRJ, Brazil.

The bladder-like larva of the cestode *Echinococcus granulosus* causes cystic hydatid disease. Its host-exposed structure is a unique mm-thick layer of extracellular matrix termed the laminated layer (LL), the major component of which is a meshwork of insoluble mucins. Although these mucins are probably important determinants of the anti-inflammatory response elicited by the parasite, no structural information on them has been available until now. Hydrolysis of the crude LL releases galactose, *N*-acetylgalactosamine and *N*-acetylglucosamine, in decreasing abundance and as the only quantitatively significant monosaccharides. Reductive β -elimination released two dominant highly soluble oligosaccharitols that were identified as galactose $\beta(1-3)$ *N*-acetylgalactosaminitol and galactose $\beta(1-X)$ galactose $\beta(1-3)$ *N*-acetylgalactosaminitol. Work is under way on the less soluble oligosaccharitols, which appear to be galactose-rich chains up to 10 residues long, with either a single or no *N*-acetylglucosamine residue(s). The non-hydrolysed mucins, solubilised through reduction/alkylation and sonication, migrated cathodically in the absence of SDS. Upon lectin blotting, they bound PNA and RCA1 (which recognise galactose $\beta(1-3)$ *N*-acetylgalactosamine and various galactose-capped structures, respectively) but not several other lectins. Our data suggest that the LL mucins are formed by cationic apomucins (as hinted by sequences in the parasite transcriptome) decorated with conventional *O*-glycan cores and variable-length, galactose-only, elongations thereof.

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SIGMA-ALDRICH