

Partial Purification and Characterization of a Serum Lectin from Tilapia Fish (*Oreochromis niloticus*)

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Lectins are proteins or glycoproteins that recognize carbohydrates with a high degree of specificity. They agglutinate cells, precipitate polysaccharides, glycoproteins and glycolipids. Several studies concerning lectins isolated from serum, plasma, mucus and skin of fish have shown the biological importance of these proteins in fish immunology. The main aim of this work was the partial purification and characterization of tilapia fish (*Oreochromis niloticus*) serum lectin(s) by fractionation with ammonium sulfate (0-20%, F1; 20-40%, F2; 40-60%, F3; 60-80%, F4), carbohydrate specificity, affinity chromatography (Concanavalin A-Sepharose 4B) and polyacrylamide gel electrophoresis containing sodium dodecyl sulphate (10% SDS-PAGE). The serum lectin was inhibited by galactose and lactose; it was partially purified through ammonium sulfate precipitation. The electrophoresis of the fractions was distinct, under reducing and non-reducing conditions. F2, with higher hemagglutinating activity (HA, 512⁻¹), was applied to the affinity chromatography. The adsorbed proteins were eluted with 200 mM N-methyl-glucosamine. Active peak fractions were pooled, dialyzed and electrophoresed. Hence, it can be concluded that tilapia serum lectin(s) was partially purified by two steps and included within the family of the galectins.

Keywords: Lectin; Purification, Affinity chromatography; Tilapia fish.

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