

PURIFICATION AND CHARACTERIZATION OF A LECTIN FROM AN ANTARCTIC LICHEN *USNEA AURANTIACO-ATRA*

Chaves,L.S; Souza,B.W.S; Silva, D.C; Barros,F.C.N; Cordeiro,L.S; Bezerra,C.F; Pereira,J.G; Ponte-Freitas,A.L

Departamento de Bioquímica e Biologia Molecular, Universidade Federal do Ceará, Ceará, Brasil.

Lichen is a symbiosis between two or more organisms living together for a more successful life. Lectins constitute a group of proteins or glycoproteins which bind reversibly to carbohydrate and usually agglutinate cells. The first aim of our research was to survey the presence of hemagglutinating activity in aqueous extracts in the lichen *Usnea aurantiaco-atra*. The positive preliminary results led to the isolation and characterization of a lectin. The lichen was collected in King George Island, during the Antarctic summer. The sample was macerated, extracted with 5 mM phosphate buffer saline pH 7.0 and centrifuged at 10.000 x g for 30 min at 4°C. Hemagglutinating activity of the extract was tested against different erythrocytes and preferentially agglutinated chicken erythrocytes treated with subtilisin. This activity was maintained at temperature of 50°C / 30min and did not show divalent cation dependency. The concentrated extract was dialyzed against 5mM PBS, pH 7.0 and applied to a DEAE-Sephacel-column. The PII-DEAE fraction was collected and loaded onto a Mucin-Sepharose 4B column. The lectin was not inhibited by simple sugars at 50 mM concentration, but was inhibited by the glycoproteins fetuin, yeast mannan and bovine submaxillary gland mucin. Native-PAGE showed only one band with a Mr of 43.3 kDa.

Key words: Lectin, Lichen, Hemagglutinating Activity

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