Purification and partial characterization of a Casein-specific Lectin from *Phthirusa pyrifolia* leaves

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Lectins are proteins with carbohydrate-binding domains that reversibly bind them. The aim of this work was to purify and characterize partially a lectin from *Phthirusa pyrifolia* leaves, useful as a popular medicinal plant against respiratory diseases and liver aches. *P. pyrifolia* leaves were collected in the UFPE campus (Pernambuco, Brazil), triturated and the extract, 10 % (w/v) in 0.15M NaCl, was obtained by agitation for 4 h at 4 ^{o}C, followed by filtration and centrifugation. The supernatant obtained was termed crude extract (CE). Salt $(NH_4)_2SO_4$ was added to CE until 20-40% saturation. The precipitate was collected by centrifugation, dissolved in 0.15M NaCl and dialyzed against H_2O and 0.15M NaCl before application to a column of CM-cellulose which had previously been equilibrated with 0.15M NaCl. The adsorbed proteins were eluted with 0.5M Tris-HCl buffer, pH 8.5 and the Hemagglutinating Activity (HA) was determined in each fraction. Different erythrocytes were agglutinated by pure lectin with better specific HA (SHA) for Human O erythrocytes. The lectin HA was not inhibited by the tested carbohydrates while the activity was totally abolished by glycoproteins (casein, azocasein and bovine serum albumin). By SDS-PAGE with reducing agent (beta-mercaptoethanol) the lectin revealed two protein bands. This work present a new lectin obtained by simple protocol purification with potential biomedical applications.

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