

A Novel Lectin from *Phthirusa pyrifolia* (Mistletoe) Leaves: Antimicrobial Properties

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Lectins are naturally occurring proteins/glycoproteins that bind carbohydrate residues selectively and non-covalently; they are involved in various biological processes and exhibit substantial structural diversity. *Phthirusa pyrifolia* (mistletoe) is a medicinal plant used against respiratory diseases and liver aches. The aim of this work was the partial characterization of *P. pyrifolia* leaf lectin, PpyLL, previously purified. The lectin was obtained by saline saturation and two consecutive chromatography steps on Sephadex G100 and ion-exchange on CM-Cellulose. SDS-PAGE under non-reducing conditions revealed a monomeric protein with a molecular weight of 15.6 KDa. Purified active PpyLL, an acidic glycoprotein, was not dependent of divalent cations. PpyLL showed antimicrobial activities against bacteria (Gram-positive: *Staphylococcus epidermidis*, *Streptococcus faecalis* and *Bacillus subtilis*; Gram-negative: *Klebsiella pneumoniae*) and fungi (*Fusarium lateritium* and *Rhizoctonia solani*). PpyLL inhibited the growth of bacteria tested; although not bactericidal to some strains, the lectin was able to agglutinate and form large cell aggregates. The lectin may be used as an adjuvant to the treatment of some diseases associated with these microorganisms. In conclusion, this new lectin from *P. pyrifolia* leaves was purified by a simple protocol and has a potential application in biomedical field.

Key-words: Lectin, *Phthirusa pyrifolia*, Antimicrobial activity.

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