

ANTIBACTERIAL LECTIN FROM *MYRACRODRUON URUNDEUVA* HEARTWOOD

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Lectins, proteins that bind cell surface carbohydrates, promote cellular agglutination and antibacterial activity. The hardwood of *Myracrodruon urundeuva* is resistant to microorganisms. This work evaluated antibacterial effect of *M.urundeuva* heartwood lectin (MuHL). Saline extract (10%, w/v) was fractionated with ammonium sulphate. F₁ (40-60% fraction) was chromatographed on chitin column; MuHL was eluted with 1.0M acetic acid. Hemagglutinating activity (HA) was performed with rabbit erythrocytes. HA inhibitory assay used N-acetylglucosamine. Gram-positive (*Bacillus subtilis*, *Corynebacterium callunae*, *Staphylococcus aureus*, *Streptococcus faecalis*) and Gram-negative (*Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*) bacteria were maintained on nutrient agar. Antibacterial activity was investigated by disk diffusion method. Paper disks (6 mm diameter) were impregnated with extract, F₁ or MuHL containing 725, 309 and 15 µg of proteins, respectively. Negative and positive controls contained 0.15 M NaCl and amoxicillin, respectively. Minimal inhibitory (MIC), bactericide (MBC) and agglutinating (MAC) concentrations were determined. Lectin activity was inhibited by N-acetylglucosamine. Extract, F₁ and MuHL inhibited bacteria growth. Inhibition halos varied between 10 and 22 mm. Lowest MIC value was obtained to *S.aureus*; MBC for this bacterium was 8.1 µg.mL⁻¹. Lectin agglutinated all bacteria; *S.aureus* resulted in lowest MAC (2.34 µg.mL⁻¹). MuHL was a bioactive molecule of heartwood and provided evidence that lectin can be involved in heartwood durability.

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Key words: antibacterial activity, heartwood lectin, *Myracrodruon urundeuva*.