HYPOGLYCEMIC ACTIVITY OF COPERNICIA CERIFERA MART. LEAF POWDER EXTRACT IN THE TREATMENT OF ALLOXAN-INDUCED DIABETIC MICE

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Introduction: Diabetes mellitus is a group of diseases characterized by hyperglycemia associated with complications, dysfunction and failure of various organs, which may result from defects in secretion and/or insulin action. It was recently isolated from carnauba’s wax one chemical compound consisting of cinnamic acid’s esters found in the wax-maker dust (PCO-C), which showed hypolipidemic and hypoglycemic effects in animals. From the chemical point of view, carnauba’s wax (PCO-C) is composed of a mixture of many substances, predominantly esters. The toxicological and ecotoxicological tests showed that carnauba’s wax is a product nontoxic and does not harm the environment. Objectives: This study aimed characterizes esters from carnauba crude powder and evaluates its hypoglycemic effect on the treatment of diabetic animals. Materials and methods: Groups of diabetic mice were induced by single injection of alloxan (150mg/kg) intraperitoneally and treated with Carnauba crude powder (100 and 150 mg/kg), water and glibenclamide (10 mg/Kg). Blood samples were collected to determine the glucose serum level. To analyze the significance of differences among data was used ANOVA followed by Newman-Keuls test were considered significant results had p <0.05. Results: The compound was identified and characterized as diester of the 4-methoxycinnamic acid (PCO-C) and presented the hypoglycemic effect in the concentrations of 100 and 150 mg/kg body weight (b.w.) the concentration 150 mg/kg b.w. of PCO-C presented the best effect on controlling glucose levels (p<0.05), when compared to the reference drug. Conclusions: The results indicate that the PCO-C is a promising therapeutic compound with hypoglycemic effect. This action can be justified by the presence of the diester of 4- methoxycinnamic acid.

Acknowledgements
The authors thank the FUNCAP (Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico) and BNB (Banco do Nordeste do Brasil) for their financial support.

Keywords: Carnauba wax; Cinnamic acid esters and Diabetes Mellitus.