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EFFECTS OF Plectranthus amboinicus EXTRACTS ON SERUM URIC ACID LEVELS IN AN ANIMAL MODEL OF HYPERURICEMIA

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Hyperuricemia is characterized by increased blood uric acid levels above 6.8 mg/dL. This occurs due to increased production or decreased excretion of uric acid. Hyperuricemia, if left uncontrolled, can lead to the development of cardiovascular disease, kidney disease, and gout. There are few medications available to treat hyperuricemia, and a significant percentage of patients do not respond to treatment. Furthermore, these medications have adverse effects. Therefore, the search for new options for hyperuricemia therapy becomes relevant. This study investigated the effects of ethanolic and aqueous extracts of *Plectranthus amboinicus*, popularly known as "Brazilian boldo or boldinho", on biochemical and enzymatic parameters in an animal model of hyperuricemia induced by potassium oxonate injected intraperitoneal and administration of uric acid by gavage, in male Wistar rats. The experiments were conducted following protocol approved by the Animal Ethics Committee (CEUA-UFOP), under number 8876050723. After the induction of hyperuricemia, the animals were treated with different doses of the extracts (5, 15, 30, 60, 120, and 240 mg/kg). Urine was analyzed to quantify excreted uric acid over a five-hour period. Blood was collected to determine serum uric acid levels, and the liver was used for analyzing xanthine oxidase (XOD) enzyme activity. The action of this enzyme is responsible for the metabolism of uric acid for renal excretion, which consequently reduces serum uric acid levels. The extracts were evaluated for their ability to increase renal excretion and reduce serum uric acid levels, aiming to improve the clinical condition of patients with gout. A significant reduction in serum uric acid levels and inhibition of hepatic XOD activity were observed in all treated groups for both extracts, at all doses evaluated. Furthermore, treatment with the aqueous extract at doses of 60, 120, and 240 mg/kg significantly increased urinary uric acid excretion, while the ethanolic extract had no effect at any of the doses evaluated. The results indicated that the ethanolic extract of *P. amboinicus* showed an effect in reducing serum uric acid by inhibiting XOD. While the aqueous extract of *P. amboinicus* demonstrated therapeutic potential for the treatment of hyperuricemia, through inhibition of XOD and increased renal uric acid excretion. The authors thank the support from their institutions and the financial support of Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Amparo à Pesquisa do Estado de Minas Gerais (FAPEMIG), Universidade Federal de Ouro Preto (UFOP), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).

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