



IN VITRO ANTIUROLITHIC EFFECT OF EXTRACTS, FRACTIONS, AND ISOLATED COMPOUNDS FROM *Eugenia mattosii* LEAVES

Bianca Letícia Maciél¹, Luma Da Silva Portella¹, Anelize Dada¹, Camile Cecconi Cechinel-Zanchett¹, Rita de Cássia M. V. De A. F. Da Silva¹, Priscila de Souza¹, Giovana Vechi¹

¹Universidade do Vale do Itajaí, Brasil. *giovanavechi@univali.br

INTRODUCTION

Urolithiasis, characterized by the formation of calcium oxalate (CaOx) crystals in the kidneys, is a common health issue with limited pharmacological treatment options (Gisselman et al., 2009). This study aimed to evaluate the in vitro antiurolithic activity of extracts, fractions, and isolated compounds from *E. mattosii* leaves.

MATERIAL AND METHODS

Chloroform (CLF) and ethyl acetate (EAF) fractions, along with crude methanolic extract (CME) of *E. mattosii* leaves and pinostrobin (PIN) and cryptostrobin (CRY) isolated from CLF were evaluated. Phytochemical analyses were previously prepared and described according to Vechi (2018). Urine from hypertensive rats (SHR) was collected, and CaOx crystallization was induced with sodium oxalate (0.1 M). Treatment groups included CME, EAF, CLF, PIN, and CRY at concentrations of 0.01-1 mg/mL. The positive control was potassium citrate (10 mg/mL). Crystallization was analyzed using a Neubauer chamber. The study was approved by the Ethics Committee (CEUA/UNIVALI: nº 050/18).

RESULTS

EAF promoted an increase in crystal formation at all tested concentrations. In contrast, CLF significantly reduced crystal formation at 0.01 mg/mL and 0.03 mg/mL, demonstrating a dose-dependent effect. Isolated compounds PIN and CRY exhibited strong inhibitory activity at 0.01 mg/mL, comparable to the positive control potassium citrate. The reduction in CaOx crystallization suggests that the active constituents in CLF contribute significantly to its antiurolithic potential. These findings highlight the promising role of CLF and its isolated compounds in kidney stone prevention.

CONCLUSIONS

The findings suggest that CLF and its isolated compounds, cryptostrobin and pinostrobin, have potential as natural agents for kidney stone prevention. Further studies are necessary to elucidate their mechanisms of action and confirm their clinical applicability.

REFERENCES

(Gisselman et al. 2009, Compendium on Continuing Education for the Practicing Veterinarian)

(Vechi et al. 2019, Nat. Prod. Commun.)

