



DIURETIC EFFECT OF HYDROALCOHOLIC EXTRACT OF *Tagetes erecta* L. FLOWERS
(STANDARDIZED TO 10% LUTEIN) IN RATS

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INTRODUCTION

Cardiovascular diseases are the leading cause of death in the world, with systemic arterial hypertension being the most prevalent. Despite the large number of drugs available, the control of hypertension has been shown to be inadequate. Thus, the search for new molecules or herbal medicines is very important for the expansion of the available therapeutic arsenal. Thus, the present study aimed to evaluate the diuretic and saluretic efficacy popularly attributed to *Tagetes erecta* L. (Asteraceae) species in rats.

MATERIAL AND METHODS

Female and male Wistar rats received a single oral treatment with hydroalcoholic extract of *Tagetes erecta* (ETE), hydrochlorothiazide (HCTZ) or just vehicle (VEH). The effects of ETE in combination with diuretics for clinical use as HCTZ and amiloride, as well as with L-NAME (a non-selective nitric oxide synthase inhibitor), atropine (a non-selective muscarinic receptor blocker) and indomethacin (an inhibitor of the enzyme cyclooxygenase) were also explored. Cumulative urine volume and urinary parameters were evaluated at the end of the 8-h experiment. Authorization from CEUA/UNIVALI: 043/18p.

RESULTS

When given to rats, at doses of 0.1 and 1 mg/kg, ETE was able to stimulate both diuresis and electrolytes excretion (Na⁺,

K⁺), when compared with VEH-treated only rats. While the combination with HCTZ successfully strengthened ETE-induced diuresis, the combination with amiloride did not intensify the effect of ETE. However, these effects were not accompanied by a potentiation of the Na⁺ excretion. On the other hand, when given ETE plus amiloride, this combination was able to maintain the potassium-sparing effect characteristic of this class of diuretics. Besides, the diuretic effect of ETE was enhanced after pretreatment with L-NAME and its action was significantly precluded in the presence of indomethacin or atropine. From these data, it may be suggested that the renal effect of ETE may be related to the generation of endogenous prostanoids and may also have the involvement of acetylcholine muscarinic receptors. Moreover, the natriuretic effect induced by ETE was fully maintained in the presence of atropine or in the presence of indomethacin, opening perspectives for a mode of action different from those explored in the present study and which remain to be further investigated.

CONCLUSIONS

This study revealed the diuretic, natriuretic and kaliuretic effect of the hydroalcoholic extract of *Tagetes erecta* flowers in rats.

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