

LETTER TO
EDITOR

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Re: Protective effects of *Chromolaena odorata* extract on experimental benign prostatic hyperplasia in rats

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To the editor: We read the article entitled “Protective effects of *Chromolaena odorata* extract on experimental benign prostatic hyperplasia in rats” with great interest. This research aimed to evaluate the effects of hydro-methanol extract of *Chromolaena odorata* (HMECO) on testosterone propionate (TP)-induced benign prostate hyperplasia (BPH) rat model. We want to congratulate the authors for this original article and make some positive comments. The BPH is a common condition in both aged men and dogs. Although not considered a precursor of prostate cancer (PCa), BPH commonly affects the prostate gland, and shares some features with PCa, like symptoms, hormone-dependent growth and response to anti-androgen therapy.¹ Increasing our understanding in BPH can bring us more knowledge about PCa, for men and dogs. This is an article whose methodology is easy to replicate and whose authors know the specificities of this model of prostate hyperplasia. In our opinion, the remaining prostate lobes could have been evaluated, although in this specific model of BPH the hyperplasia of rat ventral prostate lobes is considered analogous to the morphological alterations of human BPH. This article reinforces the importance of animal models in the preclinical evaluation of new therapies obtained from natural extracts. In a similar way, our research group evaluated effects of *Castanea sativa* Mill. flower (CF) in a N-methyl-N-nitrosourea (MNU) plus testosterone rat model.² Animals from induced groups received a multistep protocol for PCa induction, consisted of sequential administration of flutamide, testosterone propionate, the carcinogenic agent MNU and crystalline testosterone. Animals from treatment groups were exposed to CF extract in drinking water, at a dose of 3.00 mg per animal daily, for 49 weeks, starting at the time of the carcinogenesis induction. Animals were sacrificed at 61 weeks of age, approximately 10 months

after MNU administration. Our results suggested that CF extract was well tolerated by the animals and did not cause severe hepatic or renal toxicity. Furthermore, the animals exposed to the CF extract showed fewer inflammation areas on the dorsolateral prostate lobe than those not exposed to the CF extract, suggesting that this extract may be used as chemopreventive agent against prostate cancer and seems to have an antioxidant role. In conclusion, the studies with animal models of BPH and PCa add value to the study of prostate diseases and to test the efficacy of natural compounds, and their extracts.

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References

1. Ørsted DD, Bojesen SE. The link between benign prostatic hyperplasia and prostate cancer. *Nat Rev Urol* 2013; 10(1): 49-54.
2. Nascimento-Gonçalves E, Seixas F, Silva M, et al. The influence of *Castanea sativa* Mill. flower extract on hormonally and chemically induced prostate cancer in a rat model. *Food Funct* 2021; 12: 2631-2643.

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