Evaluation of antioxidant effects in vitro of Garcinielliptone FC isolated from *Platonia insignis* Mart

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Introduction

The Clusiaceae family includes 20 genuses, divided in 900 species, distributed in tropical regions of the world (Santos et al., 1999). Besides, some plant of Clusiaceae family has its pharmacological properties associated to xanthone derivative presence, which has antioxidant and anticarcinogen activities[1].

Platonia insignis Mart. (Clusiaceae), commonly known as "bacuri", is a thick-skinned fruit, with approximate dimension of an orange, which contains a large quantity of resins. The pulp enclosing the seeds is white, bittersweet, with a pleasant smell and taste. The fruit can be consumed raw or in the form of juice, ice-cream or jam[2].

The seeds were dried at 55ºC and powdered. The 848.2 g of crush yielded was extracted with hexane (63%, w/w). The hexanic extract was subjected to silica gel (open column, 400 g, 4 × 60 cm, 1 ml/min) cc and eluted with n-hexane containing EtOAc increased amounts of and washed with methanol at process end.

The resultant hexanic extract yields 51 subfractions. The fraction 33 was further purified on TLC plates and eluted with $CHCl_3$–MeOH (9:1) to yield 1/1a (22 mg) was identified by spectroscopic methods.

Garcinielliptone FC (1/1a): yellow oil; ^1H and ^{13}C NMR, spectroscopic data, EIMS m/z (%): 602 $[M]^+$ (1), 465 (6), 341 (8), 231 (10),177 (3), 137 (20), 109 (11), 69 (100). Their structure and molecular formula (m/z 603.3; $C_{38}H_{50}O_6$) were confirmed by GC-MS and NMR data (Fig 1).

The antioxidant effects of Garcinielliptone FC (GFC) isolated from the seeds of P. insignis were assessed in vitro tests (thiobarbituric acid reactive species (TBARS) assay, hydroxyl radical-scavenging activity, and scavenging activity of nitric oxide (NO)) (Fig. 2).

Results and Discussion

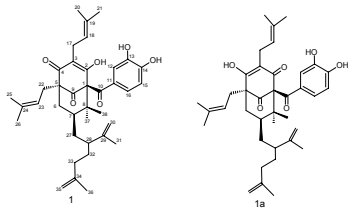

Figure 1 – Garcinielliptone FC (1/1a)

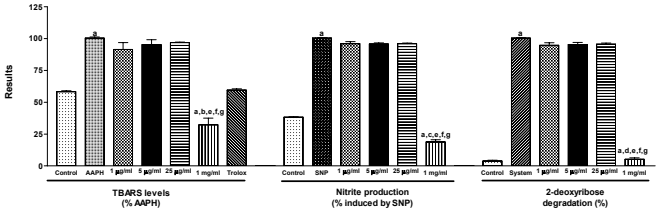

Figure 2 - Antioxidant effects in vitro of Garcinielliptone FC (GFC) against peroxyl radicals generated by AAPH and scavenging activities against nitric oxide (NO) and hydroxyl radicals. A lipid-rich system was incubated with a free radical source (AAPH) and the effect of different concentrations of GFC on the lipoperoxidation was measured.

Conclusion

In conclusions, our results support that the GFC compounds exhibits an antioxidant action preventing lipoperoxidation, probably due to hydroxyl radical scavenging activity. Further studies currently in progress will enable us to understand the precise action mechanisms of this bioactive compound.

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