Comparative study of the antioxidant potential of *Phyllanthus niruri*, *Mentha pulegium* and *Uncaria tomentosa* in vitro

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Considering the importance of the oxidative stress in the pathogenesis of various human diseases, including those related to the central nervous system and the presence of a number of compounds with antioxidant properties in the plant extracts, the aim of the present study was to investigate, in a comparative way, the antioxidant capacity of the three popularly worldwide used plants (*Phyllanthus niruri*, *Mentha pulegium* and *Uncaria tomentosa*) on the oxidative stress induced by Fe²⁺ in brain of mice, and on the ability to scavenge DPPH radical. The butanolic, ethanolic, and hexanolic extracts were prepared as follow: 0.3g of the dried plant were put in the respective solvent (10mL) and maintained in the dark during seven days. Subsequently, the solvent was evaporated and the resultant pellet was suspended in water (10mL). The aqueous extract was prepared just before use by infusion of the plant (0.3g) in hot water (95°C) during 10min. In the DPPH scavenging activity assay, both aqueous and ethanolic extracts exerts significant effects, whereas hexanolic and butanolic does not, being observable the potency order: *P. niruri* > *U. tomentosa* > *M. pulegium*. In the TBARS assay it was found that both *P. niruri* and *U. tomentosa* presented significant antioxidant effect, being *M. pulegium* almost ineffective. Thus, we suggest that *U. tomentosa* and *P. niruri* present the highest antioxidant properties *in vitro* as compared to *M. pulegium*. However, more studies are necessary to better characterize the phytochemical profile of these plants in order to better explore their pharmacological properties.

Keywords Medicinal plants, antioxidant, oxidative stress.

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