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Evaluation of antioxidant activity of selected Brazilian plants extracts

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Congress Abstract

Numerous diseases are induced by free radicals and it has long been recognized that naturally occurring substances in higher plants have antioxidant activity. This study aims to evaluate the antioxidant and protective effect of crude ethanolic extracts of plants from Bahia (Brazil), namely *Poiretia bahiana* (Pb), *Acritopappus confertus* (Ac), *Cuphea carthagenensis* (Cc) and *Polygala ignatii* (Pol). Antiradicalar activity of the extracts was measured using DPPH assay. Pb, Cc and Pol extracts proved to have radical scavenging activity. Ac showed the highest activity (EC50 = 30 µg/ml). Additionally, human hepatocytes cells (HepG2) were submitted to oxidative stress induced by t-BOOH, in the presence of plants extracts in several experimental situations. In pre-incubation treatments, cells were incubated with extracts for 4h, followed by treatment with t-BOOH for 3h. For co-incubation treatments, cells were co-incubated with extracts and t-BOOH for 4h. Antioxidant status of HepG2 was assessed by measuring glutathione (GSH) levels. Pre-incubation with Ac and Pol extracts at 25 µg/ml presented the best results (82.7% and 79.3% of cell viability, respectively) indicating that protective potential against cell death is probably achieved by induction of antioxidant defenses. Incubating HepG2 cells with Pol and Cc extracts resulted in induction of intracellular antioxidant GSH in a concentration-dependent manner. Pol concentration of 25 µg/ml showing percentages higher than control (125%) evidencing that extracts may have protective role against oxidative damage in liver tissue. Extracts co-incubated with t-BOOH prevented cell death in all concentrations tested, indicating that the extracts possess direct antioxidant effects against t-BOOH toxicity, eventually by their antiradical scavenging activity.

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Keywords: Poiretia bahiana, Acritopappus confertus, Cuphea carthagenensis, Polygala ignatii, antioxidant activity