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EVALUATION of the activity NEUROPROTECTIVE of species of the family EUPHORBIACEAE against the toxicity induced by ROTENONE in *Drosophila melanogaster*

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Abstracts:

Several studies have shown that the plants and their constituents are a large source of antioxidant compounds, molecules determinants in the prevention or delay of neuronal pathologies, for which has increased its study [1-3]. In previous studies carried out by the Biotechnology- Natural Products Group, methanolic extracts of *Phyllanthus niruri, Croton magdalenensis, Mabea montana* (Euphorbiaceae) [4], showed strong antioxidant activity by the methods of DPPH$^{\bullet}$, ABTS$^{\bullet+}$ and mainly due to the presence of phytocompouds so as flavonoid characterized chromatographically by thin layer chromatography and high-performance liquid chromatography.

Evaluation of the neuroprotective effect of extracts from *P. niruri, C. magdalenensis* and *M. montana* against the toxicity induced by rotenone *in vivo* (*Drosophila melanogaster*) model of neurotoxicity [5,6], 75 male flies were exposed for seven days in a food supplemented with extracts methanol to 0.1% and rotenone (100 µM), rotenone (100 µM) and normal controls as eating food, after this period, the evaluation by the prototype RING negative geotaxis [7] and alike , the content of dopamine in the brain region of flies was quantified by liquid chromatography high efficiency (HPLC-UV) [8]. Methanol extract of *Phyllanthus niruri* showing a lower locomotive deficit in males tested treatments and present a complete protection to the effects of toxicity induced by rotenone and dopamine content of 61-65 (µg/L). This activity can be attributed mainly to the flavonoids (66.66% flavone-flavonol / 33.33% isoflavone) present.

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