Phytochemical aspects and toxicity of extracts of *Norantea brasiliensis* obtained from *in vivo* and *in vitro* conditions

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Introduction: *Norantea brasiliensis* is a neotropical native species, found from northeast to southern of Brazil, mainly in coastal sandy plains (restingas). In folk medicine, it is used as tea against heart diseases. Phytochemical studies revealed the presence of analgesic, anti-inflammatory, antitumor, trypanocidal and DNA protective activities. In this context, this study aimed to evaluate the phytochemical aspects and toxicity of extracts of *N. brasiliensis* obtained from *in vivo* and *in vitro* conditions.

Methodology: The study has been conducted to evaluate methanol extracts obtained from leaves and stems of field-grown plants and shoots and roots of *in vitro* propagated plants, established on B5 medium. Qualitative phytochemicals analyses were performed to determine the presence of compounds related to the most important chemical classes (alkaloids, flavonoids, phenols, tannins and saponins). To evaluate toxicity of the extracts, it was used brine shrimp (*Artemia salina*), lethality test. Brine shrimp eggs were placed in seawater and incubated at 26±2°C. Eggs were hatched within 24-48h providing a large number of larvae (*nauplii*) which were transferred into vials containing different concentrations of extracts in 5 mL of seawater. Controls were prepared in vials containing only seawater, and the number of survivors was counted 24 h later. The lethal concentration 50% (LC$_{50}$) was determined using the program IBM SPSS-60.

Results/Discussion: Leaf extracts of field-grown plants showed the presence of phenols, tannins, saponins and flavonoids, while stem of field grown-plants as well as shoots and roots of *in vitro* propagated plants presented saponins and flavonoids. The extracts showed low toxicity with LC$_{50}$ values between 0.96 and 1.7 mg.mL$^{-1}$.

Conclusion: Extracts obtained from *in vivo* and *in vitro* plants revealed the presence of secondary metabolites belonging to different chemical classes. Moreover, the low toxicity levels showed by these extracts demonstrated their safety to be used in medicinal studies.

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