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Toxicological assessment of three medicinal plants from the Northwest of Argentina

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In Argentina, the practice of plants-based traditional healing is still deeply rooted in cultures of indigenous and rural communities as primary health care. Some xeric vegetal species from the phytogeographical Monte region have been principally used as medicinal resources by local communities, among them “jarilla” species stand out. *Zuccagnia punctata* Cav., *Larrea cuneifolia* Cav. and *Larrea divaricata* Cav are constituents of “jarillal” (typical plants community), and several biological activities *in vitro* and *in vivo* were demonstrated for them, such as antioxidant, antigenotoxic, antimicrobial, among others. Considering the medicinal use of these plant species, the present study aimed to evaluate the mutagenic and cytotoxic potential of jarilla species that grown in the northwest of Argentina. Due to the main way of consumption is as infusion, they were prepared by the usual domestic preparation technique. The evaluation of mutagenicity was performed using the *Salmonella*/Microsome assay, with and without metabolic activation, based on the plate-incorporation method. The Brine Shrimp lethality assay was used to test acute toxicity. For the evaluation of cytotoxicity, the XTT assay was used in chinese hamster ovary cells (CHO) and normal human lung fibroblasts cell (GM07492A). The results showed that none of the species revealed mutagenic and pro-mutagenic effect by the retromutation bacterial assay. *Z. punctata* showed “slight toxicity” in the Brine Shrimp lethality assay with a LC_{50} equal to 720 µg/mL. Additionally, this plant extract showed minor values of IC_{50} against normal cell cultures, when compared to the species of the genus *Larrea* Nevertheless, it is worth to mention that the IC_{50} values in most cases were superiors to those concentrations that it present biological activities, as have been previously described. These results provide a preliminary toxicological profile of these medicinal infusions, in order to take safety measures in their consumption. Further studies are needed to better understand the toxic effect of these species.

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