Evaluation of the Mutagenicity of Four Medicinal Plants from Minas Gerais, Brazil.
Porto, T.P.; Rosa, N.M.O.; Camargos, L.F.; Toledo, M.B.F.; Teixeira, M.; Souza, A.A.M.; Lopes, G.F.; Ribeiro, R.I.M.A.; Santos, F.V.

Laboratório de Biologia Celular e Mutagênese – Universidade Federal de São João Del Rei (UFSJ) – Minas Gerais – Brasil

BACKGROUND: Recent studies have shown that compounds obtained from natural sources may have harmful effects on biological systems. The use of these plants is an ancient therapeutic practice and is important in many societies around the world, including populations from Brazil. However, the risks associated with consumption of these compounds are not well understood. *Guettarda viburnoides* is a plant popularly used to treat liver diseases. Plants of the genus *Miconia*, as well as *M. cuspidata, Miconia chamissois* and *Miconia albicans*, have been described with antimicrobial and analgesic activities. OBJECTIVES: In the present study the mutagenicity of extracts obtained from the leaves of *Guettarda viburnoides, Miconia cuspidata, Miconia chamissois* and *Miconia albicans* was assessed. MATERIAL AND METHODS: The mutagenicity of different concentrations of the extracts was evaluated employing the Ames Assay, which identifies agents able to induce additions, deletions and substitutions of bases in DNA structure. The assays were performed in TA98 and TA100 strains of *Salmonella typhimurium*. RESULTS AND DISCUSSION: The alcoholic extract of *G. viburnoides* was mutagenic in TA98 in higher concentrations of the extract, however, was not mutagenic in strains TA100. The extracts of *Miconia chamissois* and *Miconia cuspidata* were not mutagenic and the *Miconia albicans* extract showed mutagenicity signs to TA 100 lineage. CONCLUSION: The results showed herein indicate that products from natural sources can present in its constitution components able to induced DNA damage. In this way, the use of medicinal plants should be further controlled, since several serious health problems derived from genetic damage may be caused by this practice.

Keywords: Mutagenicity, Medicinal Plants, Genetic Risks.
Financial Support: FAPEMIG and CNPq.