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Neutralizing effects of *Mimosa tenuiflora* extracts against *Tityusserrulatus* scorpion venom

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Scorpion sting represents a significant and serious public health problem in certain regions of Brazil, as well as in other parts of the world. Inflammatory mediators are thought to be involved in the systemic and local immune response induced by the *Tityusserrulatus* scorpion envenomation. The aim of this study was to evaluate the effect of extracts of *Mimosa tenuiflora* model envenomation. In mice, the envenomation model is induced by *Tityusserrulatus* venom. Previous treatment of mice with aqueous extracts, fractions and subfractions of *M. tenuiflora* was able to suppress the cell migration to the peritoneal cavity, not in a dose-dependent manner. The treatment of mice with *M. tenuiflora* extracts also decreased the level in IL-6, IL-12 and IL-1 β . We concluded that administration of the extract, fractions and subfractions resulted in a reduction of cell migration and showed a reduction of level in pro-inflammatory cytokines. This study demonstrates for the first time the antivenom effect of aqueous extract, fractions and subfractions from the *Mimosa tenuiflora* plant.

Biography

Mariana Angelica Oliveira Bitencourt graduated in Pharmacy from the Federal University of Rio Grande do Norte (2008). Master in Pharmaceutical Sciences UFRN and obtained her doctorate in Development and Technological Innovation in Medicines with experience in immunology and development of new therapeutic for the treatment of poisonings alternatives.

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Mutagenicity reduction in anaerobic, aerobic and sequential treatment

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The present paper deals with the comparison of various treatments viz. aerobic treatment by activated sludge, anaerobic treatment by cow dung filtrate and sequential treatment i.e. aerobic treatment followed by anaerobic treatment for handmade paper and cardboard industrial effluent. Besides physico-chemical parameters, improvement in the quality of effluent in terms of mutagenicity reduction was also monitored at each stage of treatment. The pH of handmade paper and cardboard industrial effluent was found increase on treating them in anaerobic and sequential treatment. Total solid content and COD were found to be significantly reduced by sequential treatment. However, the same treatment is not effective in reducing the colour of effluent. Therefore, it is very difficult to decide the suitability of effluent only on the basis of physicochemical parameters. The novel approach of this research is the comparison of treatment on the basis of mutagenicity of effluent before and after treatment. On initial day, mutagenicity ratio of the effluent was found to be above 2 at all dose level revealing the presence of mutagens which was not reduced by aerobic and anaerobic treatment. However, mutagens were found to be effectively reduced by sequential treatment and further no increase in mutagens were observed on adding S9 mix of mouse liver. The conclusion drawn out from the present study is - sequential treatment is the most suitable option rather than aerobic and anaerobic treatment for mutagenicity reduction. Anaerobic and aerobic treatment by activated sludge, when used alone, was not found suitable because of its ineffectiveness in reducing mutagens.

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