

Genotoxicity and antigenotoxicity of *Hibiscus acetosella* in animal model

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Keywords: Genotoxicity, comet assay, *Hibiscus acetosella*, antigenotoxicity, medicinal plants.

Medicinal plants are widely used by the majority of population that seeks for alternative healing of symptoms and illnesses, promoting and improvement on health quality and offering an alternative for health treatment instead allopathic medicines. Due to widespread use, there is a progressive increase in research to confirm these properties and possible harmful effects for human body. The genus *Hibiscus* (Malvaceae) has on average 220 species distributed in tropical and subtropical regions, and less than 15 has the biological effects studied. The specie *H. acetosella* has been utilized in southern Brazil by local populations as a medicinal plant. However, studies that confirm medicinal properties are scarce. This article aims to evaluate the *in vivo* antigenotoxicity/antimutagenicity and genotoxicity/mutagenicity potential of this plant in animal model. For this, 36 Swiss male mice were used. They were, divided into six groups that were treated for 15 days. Each group received one treatment: group 1 (positive control); group 2 (negative control); groups 3, 4 and 5 (*H. acetosella* extract at doses of 50mg/kg, 100mg/kg and 200mg/kg, respectively); group 6 (*H. acetosella* extract dose of 200mg/Kg). Groups 3, 4 and 5 received Methyl methanesulfonate (MMS) by intraperitoneal injection after 15 days of treatment, and the other groups received saline solution (NaCl 0.9%). The evaluation of genotoxicity and antigenotoxicity was performed by the comet assay in peripheral blood and liver tissue of animals. The results demonstrated a possible genotoxicity in liver tissue at higher doses (100mg/kg and 200mg/kg) of *H. acetosella*. However, in peripheral blood the extract showed antigenotoxic activity at lower doses (50mg/kg and 100mg/kg), without exhibiting genotoxicity at the highest dose. These data suggest genotoxic and hepatotoxic action at high doses of the extract, although shown reparative effect in DNA at the lowest doses. Financial Support: CNPq and UNESC.