Abstract

Solanum paniculatum L. is a plant species widespread throughout tropical America, especially in the Brazilian Cerrado region. It is used in Brazil for culinary purposes and in folk medicine to treat liver and gastric dysfunctions, as well as hangovers. Previous studies with S. paniculatum ethanolic leaf extract or ethanolic fruit extract demonstrated that they have no genotoxic activity neither in mice nor in bacterial strains, although their cytotoxicity and antigenotoxicity were demonstrated in higher doses. In order to assess the possible compounds responsible for the activities observed, we fractionated the ethanolic fruit extract of S. paniculatum, characterized by 1 H and 13 C NMR spectra, and evaluated two fractions containing steroidal alkaloids against mitomycin C (MMC) using the mouse bone marrow micronucleus test. Swiss mice were orally treated with different concentrations (25, 50, or 100 mg.kg\(^{-1}\)) of each fraction simultaneously with a single intraperitonial dose of MMC (4 mg.kg\(^{-1}\)). Antigenotoxicity was evaluated by using the frequency of micronucleated polychromatic erythrocytes (MNPCE), whereas anticytotoxicity was assessed by the polychromatic and normochromatic erythrocytes ratio (PCE/NCE). Our results demonstrated that steroidal alkaloids isolated from S. paniculatum strongly protected cells against MMC aneugenic and/or clastogenic activities as well as modulated MMC cytotoxic action.

Keywords

Anticytotoxicity, antigenotoxicity, Jurubeba, micronuclei, Solanaceae.