Abstract

The cytotoxic potential of stem organic extracts from Calotropis procera (Asclepiadaceae) was firstly evaluated against cancer cell lines by MTT assay. Subsequently, samples considered cytotoxic were tested for antimitotic activity on sea urchin egg development and for in vivo antiproliferative activity in mice bearing Sarcoma 180 tumor. Among the five extracts (hexane, dichloromethane, ethyl acetate, acetone and methanol), ethyl acetate and acetone extracts displayed higher cytotoxic potential against tumor cells, with IC50 ranging from 0.8 to 4.4 μg/mL, while methanolic extract was weakly cytotoxic. Cytotoxic extracts also exhibited cell division inhibition capacity by antimitotic assay, revealing IC50 values lower than 5 μg/mL. In the in vivo antitumor assessments, ethyl acetate- and acetone-treated animals showed tumor growth inhibition ratios of 64.3 and 53.1%, respectively, with reversible toxic effects on liver and kidneys. Further studies are in progress in order to identify C. procera cytotoxic compound(s) and to understand the mechanism of action responsible for this tumor-decreasing potential.

Keywords

Antimitotic, antiproliferative, Calotropis procera, Sarcoma 180 tumor, stem extracts.