

Protective effects of *Vernonia amygdalina* against sodium arsenite-induced genotoxicity in rat

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ABSTRACT

Objectives Contamination of the environment with arsenic (As) from both human and natural sources is known as a global problem. This study investigated the chemoprotective potential of *Vernonia amygdalina* leave extract against sodium arsenite-induced genotoxicity and hepatotoxicity. **Materials and Methods** Genotoxic effects were evaluated in the rat bone marrow using micronuclei. The gamma glutamyl transpeptidase (GGT) and alkaline phosphatase (ALP) activities were assayed in rat serum. **Results** Pre-treatment with extract of *V. amygdalina* at doses 5 mg/kg and 10 mg/kg significantly decreased the frequency of micronucleated polychromatic erythrocytes (PCEs). The GGT and ALP activities were elevated more than fourfold, in the liver of rats treated with sodium arsenite, while it was reduced almost to half when the sodium arsenite-treated rats were fed fresh *V. amygdalina* leave extracts. The phytochemical constituents of *V. amygdalina* assayed in this study may be responsible for high radical scavenging of the DPPH free radical observed. **Conclusion** The present results indicate that *V. amygdalina* extract is capable of suppressing the chromosomal aberration induced by sodium arsenite in rat. Thus, *V. amygdalina* may be a potent chemoprotective agent against the toxicity of sodium arsenite in rats.

KEYWORDS

Anticlastogenicity . micronuclei test . rat . sodium arsenite . *Vernonia amygdalina*

REFERENCES

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