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Safety assessment of sanguiritrin, alkaloid fraction of Macleaya cordata, in rats

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The subchronic safety of sanguiritrin, a mixture of sanguinarine (SA) and chelerythrine (CHE) quaternary benzo[c]phenanthridine alkaloids (QBA), obtained from Macleaya cordata was assessed. Rats were fed a diet containing 120 ppm sanguiritrin (100 ppm QBA) for 109 days. The feed consumption and the animal weight were monitored. The content of QBA in selected tissues and plasma was determined using HPLC. It was evidenced that 2% of QBA were absorbed through the GIT while 98% were excreted in the feces. In plasma, bilirubin, urea, creatinine, glomerular filtration, AST, ALT, GMT, ALP and total antioxidant capacity were determined. In liver, GSH level, lipoperoxidation products, SOD and GPx activities and total amount of cytochrome P450 were evaluated. Damage to nuclear DNA was assessed; a ³²P-postlabeling assay proved that no DNA-adducts were detected in nuclear and mitochondrial DNA in liver. No adverse effects were observed on rat organism. QBA had no influence on the gut mucosal epithelium, liver tissue and any biochemical parameters tested. Oxidative stress was not manifested during the experiment.

Keywords:

benzo[c]phenanthridine alkaloids; oral administration; biochemical markers; oxidative stress; DNA damage; cytochrome P450

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