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Nephroprotective effect of dropwort (*Filipendula hexapetala*) on cisplatin-induced toxicity in rats

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One of the most widely used anticancer drugs is the inorganic complex cisplatin (CP) but with many undesirable side effects and toxicity. *Filipendula hexapetala* Gilib. (Rosaceae) use in traditional medicine is based on the plants´s diuretic, astringent, antirheumatic and a inflammatory properties [1]. Our work aimed at investigating the nephroprotective effect of *F. hexapetala* aerial part (FHA) and root (FHR) methanolic extracts on CP-induced toxicity in Wistar rats. The investigated extracts were phytochemically characterized by LC-DAD-MS^n analysis. Rats were treated with three doses of FHA and FHR extracts (100, 200 and 400 mg/kg body weight, respectively), for 10 days. CP-toxicity was induced with a single injection of CP (7.5 mg/kg, *i.p.*) on 5th day of treatment. Negative and positive control (only CP) groups were also evaluated. The results of serum parameters showed that extracts significantly reduced ($p < 0.05$) the levels of ALT, AST, ALP, γGT, uric acid and urea and increased the levels of total proteins, as compared to the positive control. The extracts treatment significantly increased the activities of CAT and SOD in kidney tissue. GSH levels were slightly, but not significantly higher in groups treated with the extracts. Significant reduction in the formation of MDA was observed. Using LC-DAD-MS ^{n} analysis, flavonoid glycosides like spiraeoside and hyperoside and hydrolysable tannins (di- and trigalloyl-hexahydroxydiphenol-glucoses) were identified as major constituents of FHA, and catechin and epicatechin were identified in FHR. This study demonstrates that extracts of*F. hexapetala* are able to markedly attenuate the cisplatin-induced toxicity in kidney and to ameliorate the observed change of serum parameters.

[1] Katanić J, Mihailović V, Stanković N, Boroja T, Mladenović M, Solujić S, Stanković MS, Vrvić MM. Dropwort (*Filipendula hexapetala*Gilib.): potential role as antioxidant and antimicrobial agent,EXCLI J 2015; 14: 1–20.