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### Radical scavenger activity and chelating ability of *Filipendula hexapetala* Gilib. root extract

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*Filipendula hexapetala* Gilib. belongs to the genus *Filipendula* (fam. Rosaceae). *F. hexapetala* (dropwort) has a long history of use in folk medicine and phytotherapy in Serbia. Powdered roots of *F. hexapetala* (tuberous roots containing starch are edible but bitter), or used in decoction, were utilized to treat kidney problems, breathlessness, wheezing, sore throats and congestion. Also, it is frequently used to treat stomachache and diarrhea. The aim of this study was to evaluate the antioxidant and radical-scavenging activities of methanol root extract of *F. hexapetala*. Amount of total phenols, monomeric anthocyanins and total anthocyanins were also determined. The content of total phenolics in the extract was determined according to the Folin-Ciocalteu procedure, while the pH-differential and single pH methods were used to determine anthocyanin contents. The antioxidant activity of the methanol extract of *F. hexapetala* roots was assessed *in vitro* by the assay for DPPH free radical scavenging ability (DPPH), the superoxide radical scavenging assay and the assay for ferrous ion chelating ability. The methanolic extract showed high total phenolic content (236.47 mg GA/g). The amounts of monomeric anthocyanins and total anthocyanins recovered were 0.56 and 1.36 mg/g dry extract, respectively (expressed as cyanidin-3-glucoside equivalent). The investigated extract expressed a strong antiradical activity in the DPPH assay ( $IC_{50} = 26.3 \mu\text{g/mL}$ ) and in the superoxide radical scavenging assay ( $IC_{50} = 432.27 \mu\text{g/mL}$ ). Therefore, the extract has been proven able to prevent the initiation of free radical-mediated chain reactions. Finally, tested extract have not shown ferrous ion chelating capacity in used concentration ( $IC_{50} > 8000 \mu\text{g/mL}$ ). Investigated root extract showed high level of radical scavenger activity compared to natural antioxidants such as gallic acid, ellagic acid, quercetin and rutin.

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### Sesquiterpene lactone production in transformed chicory

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Chicory (*Cichorium intybus* L.) is a plant valued for its medicinal and culinary properties. *C. intybus* owes its healing effect, at least in part, to a group of secondary metabolites known as sesquiterpene lactones. These compounds are shown to have anti-feedant, anti-fungal, anti-bacterial, anti-protozoan, schistomycidal, molluscicidal and anti-cancer effects. Since they are present in relatively small amounts in the plant, there has been ongoing interest in ways to improve the production and yield of these compounds. One



