Department of Biology and Ecology,
Faculty of Sciences and Mathematics, University of Niš
Institute for Nature Conservation of Serbia

# 13th Symposium on the Flora of Southeastern Serbia and Neighboring Regions

**Stara planina Mt. 20 to 23 June 2019**

# 13. Simpozijum o flori jugoistočne Srbije i susednih regiona

**Stara planina 20. do 23. jun 2019.**

# ABSTRACTS
# APSTRAKTI

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Faculty of Sciences and Mathematics, University of Niš
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Abstracts

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# Book of Abstracts

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# Chemical analysis and cytotoxity of *Rumex balcanicus* Rech.F. (Polygonaceae)

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*Rumex balcanicus* Rech.f. (Polygonaceae) is an endemic species that inhabits central parts of Serbia and Kosovo. The genus *Rumex* is characterizied by the accumulation of anthraquinones, naphthalene-1,8-diols, flavonoids and stilbenoids. Aerial parts of *R. balcanicus*, collected on Vlasina Lake (Serbia) in 2014, were used to determine the chemical composition and cytotoxic activity. Cyclohexane, dichloromethane, methanol and aqueous extracts were prepared and tested using MTT-test, against human epithelial cervical cancer cells (HeLa), human colon carcinoma cell line (LS174), human non-small cell lung cancer cells (A549) and healthy MRC-5 human embryonic lung fibroblast cell line. Methanol and aqueous extracts were analyzed using LC-MS. In tested extracts, caffeic acid derivates and flavonol derivatives were identified. The main components in both extracts were rutin, miquelianin, quercitrin and quercetin 3-O-acetyl-rhamnoside. Caffeic acid and its glycosides were also present in analyzed extracts. Aqueous extracts had no cytotoxicity against tested cell lines, while cyclohexane, dichlormethane and methanol extracts were active against all tested cell lines with $IC_{50}$ ranged from 116.48±3.26 μg/mL to 178.21±1.30 μg/mL. Due to the presence of flavonoids and exhibited cytotoxic effect, *R. balcanicus* herba could be interesting as a plant material for further pharmacological analysis and isolation of the anti-tumor compounds.

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