

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**

Niš-Belgrade, 2019

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Abstracts

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Acetylcholinesterase and butyrylcholinesterase inhibitory activity of methanol extracts of 28 *Hieracium* species and their selected metabolites

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The ability of the dried MeOH extracts of aerial flowering parts of 28 *Hieracium* s. str. species from Balkan Peninsula and their selected metabolites (seven flavonoids, three phenolic acids and two sesquiterpene lactones) to inhibit acetylcholinesterase (AChE) and butyrylcholinesterase (BuChE) was determined using colorimetric Ellman method. The study included: *H. gymnocephalum*, *H. orienti*, *H. bleicii*, *H. paratrichum*, *H. spirocaule*, *H. mokragorae*, *H. pannosum* s.l., *H. plumulosum*, *H. villosum*, *H. pilosum*, *H. pseudoschenkii*, *H. naegelianum*, *H. anastrum*, *H. calophyllum*, *H. scheppegianum*, *H. durmitoricum*, *H. guentheri-beckii*, *H. mirificissimum*, *H. coloriscapum*, *H. pyricephalum*, *H. albopellitum*, *H. glabratum*, *H. scorzonrifolium* s.l., *H. dentatum* s.l., *H. neilreichii*, *H. valdepilosum* s.l., *H. tommasinianum* and *H. macrodontoides*. The extracts were mainly more active towards AChE, i.e. all inhibited more than 50% AChE, with *H. pseudoschenkii* extract being the most potent ($IC_{50}=0.64$ mg/mL). Seven extracts reached 50% inhibition of BuChE, and *H. pilosum* extract was the most active ($IC_{50}=0.56$ mg/mL). The observed activity could be attributed to some tested constituents. Flavonoid aglycones apigenin, luteolin and diosmetin significantly inhibited both enzymes ($IC_{50AChE}=47.12-89.89$ μ g/mL; $IC_{50BuChE}=18.40-73.44$ μ g/mL). Sesquiterpene lactone 8-epiixerisamine A selectively inhibited AChE ($IC_{50}=80.01$ μ g/mL). The other tested metabolites did not reach 50% inhibition of both enzymes.

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