

FACTA UNIVERSITATIS

Series: **Physics, Chemistry and Technology** Vol. 16, N° 1, Special Issue, 2018, p. 92  
49th International Symposium on Essential Oils (ISEO2018) • Book of Abstracts

## PP28. Medicinal plant *Mentha pulegium* L.–chemical profile and biological activity of its essential oil

Olivera Politeo<sup>1\*</sup>, Ivana Carev<sup>1</sup>, Mejra Bektašević<sup>2</sup>

**Keywords:** *Mentha pulegium* L., essential oil, antioxidant activity, cholinesterase inhibition

The medicinal plant *Mentha pulegium* L. (Lamiaceae) is used in traditional medicine of Bosnia and Herzegovina to treat neurological and gastrointestinal disorders [1]. Healing properties of *M. pulegium* are attributed to monoterpenoids present in its essential oil and polyphenol derivatives [2]. These bioactive components have an important role in the prevention and treatment of chronic diseases related to oxidative stress. One of them is Alzheimer's disease, a neurological brain disorder and the most common form of dementia, affecting the older population. Inhibitors of cholinesterases have an important role in the treatment of Alzheimer's disease.

The aim of this work was to analyze the chemical composition as well as the antioxidant activity and cholinesterase inhibition potential of *M. pulegium* essential oil from Bosnia and Herzegovina. The chemical composition of the essential oil was determined by GC/MS and GC/FID techniques. The antioxidant potential was tested using DPPH and FRAP methods [3,4]. Inhibition of acetylcholinesterase and butyrylcholinesterase was determined using the Ellman's method [5]. The major components found in *M. pulegium* essential oil were: pulegone (54.4%; Fig. 1), *p*-menthone (14.0%), piperitenone (12.8%) and piperitone (3.7%). A solution of the essential oil (1 g/L) showed a low antioxidant potential and a good inhibition of both cholinesterases.

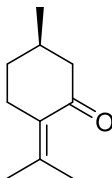


Fig. 1. (R)-(+)-Pulegone – the major compound found in *Mentha pulegium* L. essential oil

### References:

- [1] Redžić, S., 2010. J. Med. Plants Res. 4, 1003–1027.
- [2] Brahmi, F. et al., 2015. Ind. Crop. Prod. 74, 722–730.
- [3] Benzie, I.F., Strain, J.J., 1996. Anal. Biochem. 239, 70–76.
- [4] Brand-Williams, W. et al., 1995. LWT-Food Sci. Technol. 28, 25–30.
- [5] Ellman, G.L. et al., 1961. Biochem. Pharmacol. 7, 88–95.

<sup>1</sup>Faculty of Chemistry and Technology, University of Split, Croatia;

<sup>2</sup>Biotechnical Faculty, University of Bihać, Bosnia and Herzegovina.

\*Corresponding author: [olivera@ktf-split.hr](mailto:olivera@ktf-split.hr)