OP23. ISOLATION OF SECONDARY METABOLITES FROM *VALERIANA TUBEROSA* L. THROUGH *IN VITRO* ANTI-INFLAMMATORY ACTIVITY-GUIDED FRACTIONATION

Cansel ÇELIK[1]*, Yağmur ÖZHAN[2], Ceren ÖZTÜRK[1], Hande SIPAHI[2], Mehtap TEKŞEN[3], Hasan KIRMIZIBEKMEZ[1]

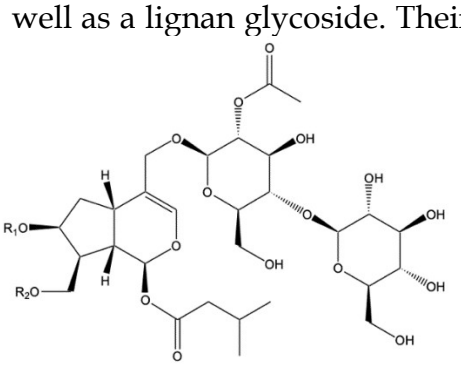
[1]Department of Pharmacognosy, Faculty of Pharmacy, Yeditepe University, TR-34755,Kayışdağı, İstanbul, Türkiye

[2]Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Yeditepe University,TR-34755, Kayışdağı, İstanbul, Türkiye

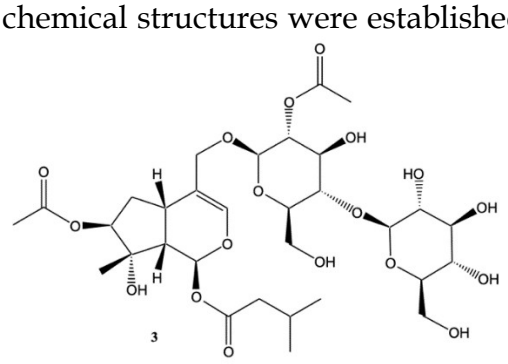
[3] Department of Biology, Faculty of Arts and Science, Aksaray University, TR-68100 Aksaray - Türkiye

* E-mail: cansel.celik@yeditepe.edu.tr

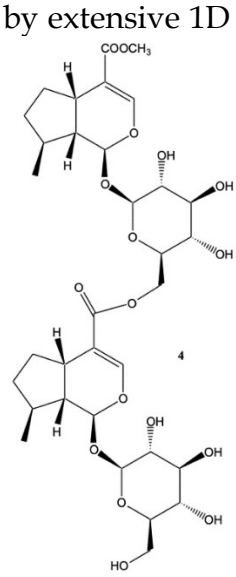
The genus *Valeriana* consists of 426 species distributed worldwide while, it is represented by 13 species in flora of Türkiye, including *Valeriana tuberosa* L [1,2]. Previous studies on some secondary metabolites obtained from *Valeriana* species indicated their cytotoxic and anti- inflammatory activities [2,3]. The aim of this study was to isolate anti-inflammatory secondary metabolites from the underground parts of *V. tuberosa* through *in vitro* activity-guided fractionation and to identify their chemical structures. The shade-dried and powdered underground parts of *V. tuberosa* were extracted with EtOH. The crude EtOH extract was dispersed in H_2O and then partitioned against Petroleum Ether (PE), $CHCl_3$, EtOAc, and *n*- BuOH, respectively. The crude EtOH extract and subextracts were tested for their *in vitro* nitric oxide (NO) inhibitory activities in LPS-induced RAW 264.7 macrophage cells. $CHCl_3$, EtOAc and *n*-BuOH subextracts exhibited remarkable inhibitory effect on the production of NO with IC_{50} values of 58.80, 61.14, and 14.17 µg/mL, respectively. Thus, these subextract were fractionated by chromatographic methods. Similarly, the main fractions were also tested in the same bioassay. Among the tested fractions, fr. IV from $CHCl_3$ subextract, fr. A from EtOAc subextract and frs. B and C from *n*-BuOH subextract displayed NO inhibition with the IC_{50} values in the range of of 57.68 to 84.49 µg/mL. Successive chromatographic studies on these active fractions by MPLC (C_{18} and SiO_2) and Sephadex LH-20 CC yielded four new iridoids (**1**-**4**) along with 12 known analogues as well as a lignan glycoside. Their chemical structures were established by extensive 1D



	R_1	R_2
1	H	Isovaleroyl
2	Isovaleroyl	H



3



4

Keywords: *Valeriana tuberosa*, anti-inflammatory activity, iridoids

Acknowledgement

This study was financially supported by The Scientific and Technological Research Council of Türkiye (TÜBİTAK, Project No: 221Z060).

References

[1] POWO. 2023. Plants of the World Online.–R. Bot. Gard. Kew. (https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:30000719-2, accessed 28 Jul 2023)

[2] Erdoğan, M., Aru, B., Yılmaz, Ş. T., Yeşilada, E., Yanıkkaya-Demirel, G., Kırmızıbekmez, H. (2023).*Phytochemistry*, 208, 113590.

[3] Wang, H., Song, Z., Xing, H., Shi, Z., Wu,P., Zhang J., Tuerhong, M., Xu, J., Guo, Y. (2020). *Bioorganic Chemistry*, 101, 103974.