Phytochemical Investigation of *Lycopsis orientalis* with Biological Activity

Abdulselam Ertaş,\(^a\) Mehmet Boğa,\(^b\) Mustafa A. Yılmaz,\(^c\) Hamdi Temel,\(^{c,d}\) and Gülcahtı Topçu\(^e\)

\(^a\)Department of Pharmacognosy, Faculty of Pharmacy, Dicle University, 21280 Diyarbakır, Turkey
\(^b\)Department of Pharmaceutical Technology, Faculty of Pharmacy, Dicle University, 21280 Diyarbakır, Turkey
\(^c\)Research and Application of Science and Technology Center (DÜBTAM), Dicle University, 21280 Diyarbakır, Turkey
\(^d\)Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Dicle University, 21280 Diyarbakır, Turkey
\(^e\)Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Bezmialem Vakif University, Istanbul 34093, Turkey

*Abdulselamertas@hotmail.com*

*Lycopsis* L., is represented by one species (*Lycopsis orientalis* L.) in Turkey and two species in the world distributing only in Balkan peninsula\(^1\) which belongs to the Boraginaceae family. *L. orientalis* is called as Frez, Kara dinding and Mıjık in the Eastern Anatolia. It can be consumed either raw or cooked and used for its diuretic effects and food source.\(^2\) A literature survey showed that no any report about chemical properties and biological activities of *L. orientalis*. Therefore, the aim of the present study is to investigate its phytochemical composition with potential biological activities. The petroleum ether, acetone, methanol and water extracts were prepared from the whole plant material successively. In the next step, antioxidant, anticholinesterase, and antimicrobial activities of the extracts were investigated, and the petroleum extract was shown highest anticholinesterase activity while the methanol extract exhibited highest antioxidant activity tested by the four complementary antioxidant assays. The petroleum ether extract of *L. orientalis* was analysed by GC/MS which exhibited a rich fatty acid composition and the oleic acid (C 18:1 omega-9) (29.1%) was identified as the major component. Because high antioxidant activity of the methanol extract, phenolic and flavonoid contents of the methanol extract were investigated by using UHPLC-ESI MS/MS quantitative and qualitatively; rosmarinic acid and rutin were found to be the most abundant compounds among the screened eleven phenolics.

The results of the present study indicate that *L. orientalis* can be used as food and a food protective agent due to its high phenolic acids content and strong antioxidant properties.

Kaynaklar: