Investigation of phenolic profiles of *Centaurea* species by LC-MS/MS analysis and determination of radical scavenging activities

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ABSTRACT

*Centaurea* is one of the largest genera growing in Turkey with more than 200 species. The genus *Centaurea* is a genus rich in phenolic content. In previous studies *Centaurea* species were examined by LC-MS/MS to examine the profile and antioxidant activities. In these studies caffeic acid, quinic acid, chlorogenic acid, elagic acid, apigenin, jaceosidine, eupatorin, quercetin, rutin and catechic acid are frequently seen. In recent study chemical profile of *C. saligna, C. aggregata* subsp. *aggreagata* and *C. urvillei* subsp. *urvillei* collected from Elazig were examined using 15 standard materials. Jaseocidine, elagic acid, sirsilineol, eupatilin, hispidulin, coumaric acid were detected in *C. aggregata* subsp. *aggregata*. Jaceosidine, sirsilineol, eupatilin and hispidulin were detected in *C. urvillei* subsp. *urvillei*. Eupatilin and hispidulin were defined in *C. saligna.* The DPPH and ABTS radical scavenging activities of *C. saligna, C. aggregata* subsp. *aggreagata* and *C. urvillei* subsp. *urvillei* were also determined. In recent study, DPPH radical scavening activity indicated that the percent inhibition of ascorbic acid at 50 μg/ml was 98%. At a concentration of 750 μg/ml, *C. saligna, C. aggregata* subsp. *aggreagata* and *C. urvillei* subsp. *urvillei* showed 91.29%, 67.77% and 36.75 % inhibition respectively. Although the region were different, similar results were observed in other studies on Centaurea saligna. In a different research, DPPH activity of the methanol extract of C. urvillei subsp. urvillei collected from Izmir was 91±2.98%. DPPH activity of C. aggregata subsp. aggreagata collected from Anatolia has found to be higher. According to ABTS scavenging activity method trolox equivalents of *C. saligna, C. aggregata* subsp. *aggreagata* and *C. urvillei* subsp. *urvillei* were determined as 22.33, 20.11 and 30.91 respectively. ABTS activity was measured in the same species collected from different regions, there is no study conducted on the Harput region.
**Keywords:** Centaurea, LC-MS, antioxidant activity