



## Quantification of caffeic acid content in 4 species of mullein (*Verbascum* sp.) ecotypes from southwest Iran

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**Background and objectives:** The *Verbascum* genus is the largest genus of Scrophulariaceae family which has extensive natural habitat in southwest of Iran. Phenolic acids are one of the most important chemical compounds that have different biological activities including anti-inflammatory, antibacterial, antiviral, anti-tumor and antioxidant. Therefore, this study was conducted with the aim of caffeic acid quantification of 4 species of *Verbascum* sp. ecotypes from southwest Iran. **Methods:** Nine ecotypes of the 4 species (*V. macrophyllum*, *V. pseudo-digitalis*, *V. sinatum*, *V. songaricum*) were collected from the southwest of Iran. Quantification of caffeic acid content using reversed-phase high-performance liquid chromatography (RP-HPLC) with UV PDA 2800 detector, a C<sub>18</sub> column with dimensions of 250×4.6 mm was performed. **Results:** The results showed that *Verbascum* sp. contained caffeic acid compound and there was a difference among species and ecotypes. The results showed the highest and lowest content of caffeic acid obtained from the *V. sinatum* species and ecotype Sepidan (7.76 µg/mg extract) and *V. songaricum* species and ecotype Farokhshahr (0.54 µg/mg extract), respectively. **Conclusion:** The results revealed a high level of variation in caffeic acid among *Verbascum* sp. which was affected by habitat and climatic. The pattern of habitats of suitable ecotypes superior in terms of composition to should be selected and used for breeding and cropping mullein.

**Keywords:** caffeic acid, HPLC, *Verbascum*