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COMPARATIVE ANALYSIS OF SOME PHENOLIC COMPOUNDS IN
SALVIA VERTICILLATA L. AND *SALVIA OFFICINALIS* L.

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The *Salvia* L. genus belongs to Lamiaceae family consists of about 700 species, of which 58 are distributed in Iranian flora [1]. A large number of secondary metabolites, belonging to various chemical groups, such as essential oils, terpenoid compounds and phenolic derivatives, have been isolated from the genus [2]. The pharmaceutical properties of *Salvia* species and their metabolites, predominantly phenolic acids and their derivatives are mainly due to their antioxidant activities [2, 3]. *Salvia verticillata* L. (purple rain or lilac sage) is one of the *Salvia* species of Iran [1], which is widely distributed in different regions of the country as dispersed wild populations. The plant contains a variety of polyphenols with strong antioxidant activities, volatile oils and diterpenoids [2]. In this project, we studied qualitatively and quantitatively some phenolic compounds (rosmarinic acid, salvianolic acid A, salvianolic acid B and carnosic acid) of *S. verticillata* and medicinal species of *S. officinalis*. Plant samples of two wild and one cultivated populations of *S. verticillata* and one wild population of *S. officinalis* were collected at full flowering stage from their natural habitats. Methanolic extracts of the dried and powdered leaf and root samples were prepared and the amounts of the phenolic compounds in the extracts were quantified by HPLC with UV detection (280 nm). Based on our results, the leaves of *S. verticillata* from Tehran and Qazvin sites were the richest sources of rosmarinic acid with values of 41.07 ±2.96 and 41.53±1.5 mg/g DW, almost three times more than that of *S. officinalis* (15.02±0.53 mg/g DW). The highest content (5.99±0.98 mg/g DW) of rosmarinic acid was obtained in roots of *S. verticillata* from Qazvin, while the lowest content (2.31±0.25 mg/g DW) of this phenolic acid was found in roots of *S. officinalis*. Leaves of *S. verticillata* from Qazvin site and Iranian Biological Resources Center (IBRC) with 41.71±5.96 and 8.10 ±0.96 mg/g DW were rich in salvianolic acid B and salvianolic acid A, respectively. Leaves and roots of *S. officinalis* with 7.75±1.06 and 4.41±0.95 mg/g DW were the richest sources of phenolic diterpene of carnosic acid. This study is the first report to show that *S. verticillata* as a wild *Salvia* species of Iran is a rich source of rosmarinic acid and its derivatives. Our results confirm that in addition to *S. officinalis*, the other wild species can be also used for medicinal purposes.

References

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