The Comparison Of Phenolic And Flavonoid Determination Methods Using Extracts Of Four Endemic Salvia Species

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Phenolics and flavonoids are compounds found in fruits, vegetables, and certain beverages that have diverse beneficial biochemical and antioxidant effects. Their dietary intake is quite high compared to other dietary antioxidants like vitamins C and E. The flavonoids have aroused considerable interest recently because of their potential beneficial effects on human health—they have been reported to have antiviral, anti-allergic, antiplatelet, anti-inflammatory, antitumor and antioxidant activities.

Total phenolic and total flavonoid compounds of the aerial parts of S. chionantha Boiss., S. cedronella Boiss. S. chrysophylla Stapf, and S. potentillifolia Boiss. & Heldr. ex Benth., all of them are endemic to southwest Anatolia of Turkey, extracted with hexane, ethyl acetate and methanol successively. Total soluble phenolics in the Salvia extracts was determined by Folin-Ciocalteu reagent using pyrocatechol as a standard [1] while total flavonoid content was assigned by Aluminium nitrate method using quercetin as a standard [2].

According to the results obtained, the ethyl acetate extract of S. chionantha (146.34±0.12 µg PEs/mg extract), and methanol extract of S. cedronella (126.79±0.13 µg PEs/mg extract) were found the higher phenolic contents while the hexane extract of S. cedronella was the least one (8.59±0.06 µg PEs/mg extract). The methanol extract (300.47±0.87 µg QEs/mg extract) and ethyl acetate extract (290.23±1.17 µg QEs/mg extract) of S. potentillifolia, and methanol extract (287.73±0.69µg QEs/mg extract) and ethyl acetate extract (267.05±1.27µg QEs/mg extract) of S. chrysophylla were found to be the richest flavonoid contents in the extracts on which were studied. In general, it was found that the polar extracts of S. chionantha and S. cedronella consist of more phenolic compounds just as the polar extracts of S. potentillifolia and S. chrysophylla are made up of more flavonoidal compounds.

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References