Evaluation of the in vitro antioxidant activity of polar and non polar extracts from Perovskia atriplicifolia Benth.

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Background and Aims: The present study was conducted to evaluate the in vitro antioxidant properties of polar and non polar extracts from aerial part of Perovskia atriplicifolia Benth.

Methods: The total extract of the plant was obtained in methanol and fractionated to two polar (water soluble) and non-polar (chloroform soluble) parts. The antioxidative potential of the samples was evaluated using two different methods: a) inhibition of 2,2-diphenyl-1-picryl hydrazyl (DPPH) stable free radical, b) β-carotene-linoleic acid assay.

Results: The polar subfraction of the methanol extract showed major effectiveness in DPPH assay with an IC50 value of 29.94 ± 0.03 µg/ml, comparable to that of synthetic standard antioxidant butylated hydroxy toluene (BHT, IC50= 19.8 ± 0.5 µg/ml). In the β-carotene/linoleic acid assay, non polar sub-fraction of the methanol extract was exhibited the highest linoleic acid oxidation inhibition percentage (70.19%) which was only slightly lower than that shown by BHT (84.53%).

Keywords: Perovskia atriplicifolia, Antioxidant activity, β-carotene-linoleic acid assay, DPPH