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Novel compound from *Limonium myrianthum* possessing antioxidant activity

A.V. Gadetskaya¹, G.E. Zhussupova¹, M.K. Murzakhmetova², S.A. Ross³, A.I. Zhussupova*¹
¹*Al-Farabi Kazakh National University, Kazakhstan*, ²*Institute for Human and Animal Physiology
MES RK, Kazakhstan*, ³*University of Mississippi, USA*

Plants of the *Limonium* Mill genus (*Plumbagenaceae* family) are represented by 300 species world-wide and 18 in Kazakhstan. Two species, *L. gmelinii* and *L. myrianthum*, are present in stocks exceeding 50 thousand tons in Kazakhstan. The current studies are focused on *L. myrianthum*. Specimens of *L. myrianthum* were collected in South Kazakhstan in August 2010. Finely ground, air-dried roots (300 g) were subjected to sequential extraction with *n*-hexane (0.3 L x 2; 48 h), acetone (0.3 L x 3; 48 h) and MeOH (0.3 L x 3; 48 h) at 30 °C with constant mixing. Extracts were evaporated to dryness under reduced pressure at 35-37 °C. Acetone extracts of the roots showed the highest antioxidant activities and were combined then subjected to silica gel chromatography with elution successively with 100% CH₂Cl₂, then CH₂Cl₂: MeOH mixtures (5%, 10%, 15%, 25%, 30%, 35%) and finally 100% MeOH to yield 8 fractions. Active fractions were combined and subjected to Sephadex LH-20 chromatography to yield 33 fractions of decreasing molecular mass. A yellow compound isolated from fractions 12 and 13 was identified as epigallocatechin-2-O-*p*-phenoxy (C₂₁H₁₈O₈; mol wt 398.36). It showed potent antioxidant activity in assays of liver microsomal lipid peroxidation. At 4 µg/mL it reduced the LPO level to 62 % of control and at 20 µg/mL, it reduced the level of LPO to 12 % of control. The antioxidant properties of epigallocatechin-2-O-*p*-phenoxy require further investigation. Two-dimensional spectra were obtained on a Bruker DRX-500 spectrometer. GC-MS spectra were obtained using an HP 6890 gas chromatograph.

Keywords: novel compound, antioxidant activity

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