

JOINT EVENT ON

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Biopolymer from *Anchusa italica* (*Boraginaceae*)

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The investigation of a water-soluble high-molecular preparation from the crude polysaccharides of *Anchusa italica* roots and elucidation of its principal structural unit was carried out. According to ¹³C NMR, ¹H NMR and 2D heteronuclear ¹H/¹³C HSQC spectral data, the main structural element of high-molecular water-soluble preparation was found to be a regularly substituted polyoxyethylene, namely poly[oxy-1-carboxy-2-(3,4-dihydroxyphenyl)ethylene] or poly[3-(3,4-dihydroxyphenyl) glyceric acid] (PDPGA). Most of the carboxylic groups of this caffeic acid- derived polyether of *A. italica* are methylated. The 2D DOSY experiment gave the similar diffusion coefficient for the methylated and non-methylated signals. This would imply a similar molecular weight for methylated and non-methylated polymers. Natural PDPGA preparations contain biologically inactive residual carbohydrates (approximately 25%) that, in accordance with high-performance liquid chromatography (HPLC)/gel-filtration chromatography (GFC) analysis are not covalently bound to PDPGA. It is suggested, that molecules of PDPGA can form with each other and with the molecules of residual polysaccharides complex supra-molecular structure due to hydrogen bonds and hence, it is almost impossible to completely separate the polysaccharides from PDPGA using HPLC/GFC technique. Antioxidant activity of PDPGA against the relatively stable 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical was investigated. IC50 value of PDPGA was 51.5 µg/ml.

Biography

Lali Gogilashvili has completed her PhD from Zeliski Institute of Organic Chemistry (Russia). She is a Senior Research Scientist at Tbilisi State Medical University I Kutateteladze Institute of Pharmacochemistry, Department of Plant Biopolymers. She has published more than 55 papers in reputed journals. Her field of professional interests is Bio-organic and Medicinal Chemistry.

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