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Dihydroxyphenyl glyceric acid biopolyether of plant origin-prospective therapeutic agent

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The structure elucidation of main structural element of high-molecular water-soluble fractions from different species of comfrey *Symphytum asperum*, *S. caucasicum*, *S. officinale*, *S. grandiflorum* and bugloss *Anchusa italica* (Boraginaceae) was carried out. According to ¹³C, ¹H NMR, APT, 1D NOE, 2D heteronuclear ¹H/¹³C HSQC and 2D DOSY experiments the main structural element of these preparations was found to be poly[oxy-1-carboxy-2-(3,4-dihydroxyphenyl)ethylene] or poly[3-(3,4-dihydroxyphenyl)glyceric acid] (PDPGA). Thus, the polyoxyethylene chain is the backbone of the polymer molecule. 3,4-Dihydroxyphenyl and carboxyl groups are regular substituents at two carbon atoms in the chain. The repeating unit of this regular polymer is 3-(3,4-dihydroxyphenyl)glyceric acid residue. Most of the carboxylic groups of PDPGA from *Anchusa italica* and *Symphytum grandiflorum* unlike the polymer of *S. asperum*, *S. caucasicum* and *S. officinale* are methylated. The 2D DOSY experiment gave the similar diffusion coefficient for the methylated and non-methylated signals of PDPGA. Both sets of signals fell in the same horizontal. This would imply a similar molecular weight for methylated and non-methylated polymers. PDPGA is endowed with intriguing