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**ABSTRACT BOOK**

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## Carboxylic acids of lipophilic complex from *Galium aparine* L. herb

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**Introduction:** Previously we reported on antibacterial and antifungal activity of lipophilic complex from *Galium aparine* L. herb. The aim of our present research was to study the carboxylic acids composition in order to provide a phytochemical evidence for established specific activities [1].

**Materials and methods:** The object of the study was the lipophilic complex from *Galium aparine* herb obtained by the exhaustive circulative extraction in Soxhlet apparatus using chloroform as an extracting agent. The analysis of carboxylic acids was carried out after methylation of acids with  $\text{BCl}_3$  in methanol (14% solution, Supelco 3-3033) on a gas chromatograph, Agilent Technologies 6890, equipped with a mass-spectrometric detector 5973. The following chromatographic conditions were applied: the INNOWAX capillary chromatographic column (30 m x 0.25 mm i.d.); the carrier gas: helium, flow rate of 1.2 ml/min; the inlet heater temperature of 250°C with the programmable oven temperature. Components were identified with the use of mass spectra libraries NIST 05 and Willey 2007 in combination with AMDIS and NIST identification software [2].

**Results:** The total carboxylic acid content in *Galium aparine* herb lipophilic complex was 26794.5±616.3 mg/kg. Dibasic acids totaled for 2878.8 mg/kg; the content of aromatic acids was 416.1 mg/kg; the total content of fatty acids was 26378.4 mg/kg. The content of unsaturated fatty acids was 16837.2 mg/kg, while the saturated fatty acids totaled for 9541.2 mg/kg. The following acids (mg/kg) were dominating: among fatty acids, linolenic (9540.9±171.7) and palmitic acids (8047.5±177.0); 2-hydroxy-3-methylglutaric acid (1669.8±40.1) prevailed among dicarboxylic acids (2387.4±47.7), and vanillic acid (224.2±4.7) was the dominating aromatic acid.

**Conclusions:** High content of unsaturated fatty acids, as well as the presence of fumaric, azelaic succinic, phenylacetic and salicylic acids may account for antimicrobial and antifungal effects of lipophilic complex from *Galium aparine* L. herb [3].

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