

**CLASSES AND FATTY-ACID COMPOSITION
OF LIPIDS FROM *Hypericum perforatum***

M. A. Omarova and N. A. Artamonova

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In continuation of studies on the chemical composition of the CHCl_3 extract of St. John's wort *Hypericum perforatum* [1], we investigated the classes and fatty-acid composition of its lipids.

The classes of lipids were determined by adsorption chromatography on L 5/40 silica gel using the solvents *n*-hexane, diethylether, CHCl_3 , and CH_3OH . The course of the separation was monitored by TLC on Silufol plates using the solvent systems *n*-hexane—diethylether—glacial acetic acid (70:30:1) (1) and diethylether—benzene—ethanol—glacial acetic acid (40:50:2:0.2) (2). Lipid groups were identified by chromatographic mobility compared with that of model compounds and the literature data [2, 3].

The ratio of various lipid classes in the extract depends on the isolation method [4]. Triacylglycerides (80.4% of the total lipids) predominate in the CHCl_3 extract of St. John's wort. Hydrocarbons, waxy esters, free fatty acids, mono- and diacylglycerides, and pigments are present in small quantities:

Component	Content, %
Hydrocarbons	3.7
Waxy esters	4.7
Carotinoids	0.3
Triacylglycerides	80.4
Free fatty acids	3.8
1,3-Diacylglycerides	1.7
1,2-Diacylglycerides	0.7
Chlorophylls	0.5
Sterols	1.5
Monoacylglycerides	1.7
Polar lipids	1.0

The composition of lipid fatty acids as the methyl esters was analyzed by TLC on a Khrom-5 instrument with a flame-ionization detector and a steel column (370 × 0.3 cm) packed with Chromaton N-AW (0.20-0.25 mm) coated with polyethyleneglycolsuccinate (15%). The column temperature was 185°C; vaporizer and detector, 220°C. Carrier-gas flow rates were 45 ml/min (Ar), 50 ml/min (H_2), 500 ml/min (air). The quantities of fatty acids were calculated as the product of peak height times retention time in minutes [2]:

Acid	Content, %	Acid	Content, %
$\text{C}_{10:0}$	1.0	$\text{C}_{18:1}$	7.7
$\text{C}_{12:0}$	2.7	$\text{C}_{18:2}$	12.7
$\text{C}_{13:0}$	0.2	$\text{C}_{18:3}$	21.3
$\text{C}_{14:0}$	5.3	$\text{C}_{20:2}$	0.7
$\text{C}_{15:0}$	0.3	$\text{C}_{22:0}$	3.3
$\text{C}_{16:0}$	29.4	Σ satd.	54.7
$\text{C}_{16:1}$	2.9	Σ unsatd.	45.3
$\text{C}_{17:0}$	1.6	Σ monoene	10.6
$\text{C}_{18:0}$	10.9	Σ polyene	34.7

Saturated fatty acids dominate in lipids of St. John's wort. Of these, the principal one is palmitic. The biologically active linoleic and linolenic acids are the principal unsaturated acids.

The classes and fatty-acid composition of lipids from St. John's wort are studied for the first time.

REFERENCES

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