

LIPIDS OF *Capparis spinosa*

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Caper *Capparis spinosa* (fam. Capparidaceae) — a widely distributed plant of Central Asia — is a source of many biologically active compounds, which leads to its wide use in folk medicine [1, 2]. We have investigated the lipid complex of the epigeal part of *C. spinosa*. The lipids were extracted from the dried and ground raw material (700 g) with chloroform–methanol (2:1). The yield of chloroform–methanol extract was 55 g (7.8%). By column chromatography, the lipid complex was separated into neutral lipids (NLs) — 28.2 g (51.5%); glycolipids (GLs) — 7.2 g (13.2%); and phospholipids (PLs) — 4.4 g (8.0%). Nonlipid components amounted to about 15 g (27%) [3].

In the NLs we detected ten classes of compounds, the predominating fractions being sterol and triterpenol esters, fatty acids, and triacylglycerols. The phospholipids consisted of seven, and the glycolipids of five, classes of compounds. The main components of the total PLs were phosphatidylglycerols (PGs), phosphatidylethanolamines (PEs), and phosphatidylcholines (PCs). In the glycolipids, the digalactosyldiglyceride and sterol glycoside fractions predominated (Table 1).

The fatty-acid compositions of the total lipids and of the individual classes were determined [4]. The fatty-acid series of the lipid complex of *C. spinosa* consisted of eight fatty acids. In almost all classes of lipids the saturated acids were represented by palmitic and stearic, and the unsaturated acids by oleic, linoleic, and linolenic, (Table 2).

In the products of the acid hydrolysis of the PLs, the sugars glucose and mannose were detected by paper chromatography [5].

TABLE 1. Class Composition of the Lipids of the Epigeal Part of *C. spinosa*

Class of lipids	Amount, % of the weight of the extract
Hydrocarbons	5.4
Sterol and triterpenol esters	18.6
Triacylglycerols	28.7
Free fatty acids	32.5
Waxes	4.2
Chlorophylls	1.9
Triterpenols	2.1
Sterols	3.8
Diacylglycerols	1.8
Monoacylglycerols	1.0
	100%
Phospholipids	
N-Acyl-PEs	14.6
N-Acyl-lyso-PEs	6.7
Phosphatidylglycerols	26.1
Phosphatidylethanolamines	20.4
Phosphatidylcholines	16.6
Phosphatidylinositols	12.8
Phosphatidic acids	2.8
	100%
Glycopeptides	
Esters of sterol glycosides	12.8
Monogalactosyldiglycerides	18.2
Sterol glycosides	25.7
Digalactosyldiglycerides	42.4
Sulfoglycolipids	0.9
	100%

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TABLE 2. Fatty Acids of the Total Lipids and of the Individual Classes from the Epigeal Part of *C. spinosa* (% GLC)

Class of lipids	12:0	14:0	16:0	16:1	18:0	18:1	18:2	18:3	Σπ	Σ11
Total NLs	1.2	1.5	40.6	4.7	8.0	29.2	8.6	6.2	51.3	48.7
Sterol and triterpenol esters	4.3	4.9	21.4	8.9	12.8	20.7	15.2	11.8	43.4	56.6
TAGs	4.8	4.5	36.7	5.0	5.0	23.2	15.6	5.2	51.0	49.0
FFAs	0.6	1.3	14.7	2.1	2.9	27.0	46.0	5.4	19.5	80.5
DAGs	3.8	4.2	49.4	4.2	12.4	15.4	10.6	Tr.	69.8	30.2
MAGs	2.7	3.8	44.7	3.8	14.8	16.7	13.5	—	66.0	34.0
Total PLs	2.6	3.7	35.0	3.5	2.4	8.9	23.8	20.1	43.7	56.3
PGs	4.3	4.8	43.1	7.9	8.1	7.3	9.7	14.8	60.3	39.7
PIs	0.5	0.4	28.8	3.3	6.4	11.8	27.3	21.5	36.1	63.9
PCs	1.1	1.0	37.1	2.3	1.8	8.3	21.7	26.7	41.0	59.0
PEs	1.0	1.3	36.9	2.7	2.9	10.7	21.5	23.0	42.1	57.9
N-Acyl-PEs	1.5	1.3	24.8	2.8	5.8	14.3	25.1	24.4	33.4	66.6
N-Acyl-lyso-PEs	5.6	3.8	35.8	5.3	12.1	10.9	14.4	12.1	57.3	42.7
Lyso-PCs	1.5	2.9	50.3	1.6	9.8	7.9	13.6	12.4	64.5	35.5
Total GLs	Tr.	6.9	31.0	1.9	6.9	7.6	18.8	26.9	44.8	55.2

Thus, the results of the investigations showed that the epigeal part of *C. spinosa* has a broad set of various lipid classes which may be a source of valuable biologically active compounds.

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