Chemistry of Natural Compounds, Vol. 46, No. 4, 2010

AMINO-ACID AND LIPID COMPOSITIONS OF GELREM PREPARATION

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UDC 547.916, 665.33

Studies of the chemical composition of flowers and the extract of the tansy *Tanacetum pseudachilleae* C. Winkl., herbs and the extract of absinthe *Artemisia absinthium* L., and buds of the tree *Caryophyllus aromaticus* L. showed that the essential oils were the principal biologically active compounds responsible for the unique activity of the preparation [1, 2].

The amino-acid and fatty-acid compositions of the preparation Gelrem were studied in order to characterize fully the aforementioned composition.

Quantitative determination of total proteins of Gelrem was performed using the Kjeldahl method and the Kaar–Kelly spectrophotometric method [3]. The analytical results showed that the total protein content of the preparation was 12.87%.

Table 1 describes the quality of proteins as characterized by the amino-acid composition.

The amino-acid composition of the preparation was analyzed after hydrolysis on a T 339 amino-acid analyzer [4]. It was found that it had high contents of glutamine, leucine, and arginine. Moreover, the dominant essential amino acids were leucine, tyrosine, phenylalanine, and lysine.

Next, we determined the content of total lipids. Extraction by $CHCl_3$:MeOH (5×, 7:3) isolated the total lipids. The combined extracts were washed with aqueous $CaCl_2$ (0.05%) to remove ballast components. The solvent was distilled off. The lipid content was determined gravimetrically. The yield was 10.5%.

The fatty-acid composition of the extract was found using the usual method [5]. Methyl esters of fatty acids were analyzed by GLC on a Chrom 5 chromatograph with a flame-ionization detector, a column (2.5 m × 4 mm) packed with DEHS sorbent (10%) on Inerton N-AW, column temperature 192°C, vaporizer temperature 250°C, and N_2 carrier gas at 30 mL/min. Fatty acids were identified by comparing their retention times with those of standards. Table 2 presents the results of the GLC analysis.

Table 2 shows that lipids of the studied preparation consisted mainly of total saturated fatty acids (61.7%) with palmitic (38.1), stearic (9.9), myristic (6.1), and margaric acids dominating. Octadecadienoic (19.5%) and octadecenoic acids (10.2) were the principal unsaturated fatty acids.

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0009-3130/10/4604-0669

TABLE 1. Amino-Acid Composition of Gelrem Proteins

Amino acid	Content, %	Amino acid	Content, %
Asp	0.7	Ile*	0.4
Thr*	0.4	Leu*	1.0
Ser	0.5	Tyr*	0.7
Glu	1.8	Phe*	0.6
Pro	0.8	His	0.5
Gly	0.6	Lys*	0.6
Ala	0.7	Arg	3.5
Met*	0.3		

*Essential amino acid.

TABLE 2. Fatty-Acid Composition, GLC, mass%

Acid	Content, %	Acid	Content, %
14:0	6.1	18:1	10.2
15:0	1.7	18:2	19.5
16:0	38.1	18:3	6.2
16:1	2.4	$\sum_{sat.}$	61.7
17:0	5.9	$\sum_{unsat.}$	38.3
18:0	9.9		

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