that had previously been heated to +80°C cooled. The CD curves of the initial sample (+20°C) and of the sample previously heated to +80°C were close.

Thus, gossypulin exhibits a high thermal stability in 10% NaCl solution which, in our view, is a consequence of the pronounced hydrophilic interactions between the hexamers of the protein [7]. This may also be the reason for the increased tendency to undergo aggregation at a high temperature in the presence of salts [11], which leads to an extension of the interval of the isoelectric precipitation of the protein in the alkaline region.

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SYNTHESIS OF THE γ-OCTADECYLAMIDE OF N-ACETYLMURAMOYL-L-ALANYL-D-ISOGLUTAMINE

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It is known that lipophilic derivatives of N-acetylmuramoyl-L-alanyl-D-isoglutamine (muramoyl dipeptide; MDP) usually possess a pronounced adjuvant and antitumoral action [1]. In order to study the influence of the method and position of introduction of a lipophilic component into the MDP molecule on its biological activity we previously obtained the heptyl and hexadecyl β-glycosides of the muramoyl dipeptide [2]. In the present communication we consider the synthesis of the γ-octadecylamide of N-acetylmuramoyl-L-alanyl-D-isoglutamine (I) – a lipophilic analog of MDP at the dipeptide fragment. In known methods of obtaining lipophilic derivatives of the muramoyl dipeptide at the carboxy group of the isoglutamine residue, modification is performed at the stages of obtaining the dipeptide [3]. We proposed to introduce the lipophilic fragment into the molecule of the protected glycopeptide at the free carboxy group of isoglutamine. In this way, it is possible to obtain a series of modifications, including lipophilic modifications, from a single glycopeptide.

The catalytic hydrogenolysis of the γ-benzyl ester of O-(benzyl 2-acetamido-4,6-O-isopropylidene-2-deoxy-α-D-glucopyranosid-3-yl)-D-lactoyl-L-alanyl-D-isoglutamine [4] over 10% Pd/C for 1 h gave a quantitative yield of O-(benzyl 2-acetamido-4,6-O-isopropylidene-2-deoxy-α-D-glucopyranosid-3-yl)-D-lactoyl-L-alanyl-D-isoglutamine (II); $[\alpha]_{546}^{20}$ + 62° (c 0.69; chloroform); IR (cm^{-1}, KBr): 3380-3300 (OH, NH_2, NH); 1650, 1520 (amide), 850 (Me_2C); 730 (phenyl); PMR (500 MHz, MeOH-d_4): 1.36 d, 1.39 d (6H, $J_{CH_3,CH}$ = 7 Hz; $2\underline{CH_3}CH$), 1.42 s, 1.50 s (6H; Me_2C), 1.91 s (3H; NAc), 2.32 t (2H, γCH_2), 4.51 d, 4.73 d (2H, J_{gem} = 12 Hz; OCH_2Ph), 7.02 s, 7.53 s (2H; $CONH_2$), 7.27-7.39 m (5H; Ph), 7.87 d, 8.24 d, 8.28 d (3H; 3NH). The N-hydroxysuccinimide ester of the acid (II), synthesized with the aid of N-hydroxysuccinimide and dicyclo-

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hexylcarbodiimide was treated with octadecylamine (1.2 equiv.), and column chromatography of the reaction mixture led to the isolation of O-(benzyl 2-acetamido-4,6-O-isopropylidene-2-deoxy-α-D-glucopyranosid-3-yl)-D-lactoyl-L-alanyl-D-isoglutamine γ-octadecylamide (III): 75%, $[\alpha]_{546}^{20}$ +67° (c 0.54; dimethylformamide); IR (cm^{-1}, KBr): 3370-3280 (NH_2, NH); 2920, 2850 (CH_2); 1650, 1540 (amide); 850 (Me_2C), 710, 690 (phenyl). The isopropylidene protection in the amide (III) was eliminated by heating it with 80% acetic acid, giving O-benzyl 2-acetamido-2-deoxy-α-D-glucopyranosid-3-yl)-D-lactoyl-L-alanyl-D-isoglutamine γ-octadecylamide (IV), 94%, $[\alpha]_{546}^{20}$ +59° (c 0.69; dimethylformamide); IR (cm^{-1}, KBr): 3380-3270 (OH, NH_2, NH); 2910, 2840 (CH_2); 1630, 1540 (amide); 710, 690 (phenyl); PMR (500 MHz, DMSO-d_6): 0.87 t (3H; $\underline{CH_3}CH_2$), 1.17-1.36 m (CH_2, $2CH_3CH$), 1.50 m (2H; $\underline{CH_2}CH_2N$), 1.80 s (3H; NAc); 2.06 t (2H; $\gamma\underline{CH_2}$), 4.44 d, 4.67 d (2H, J_{gem} = 12 Hz; OCH_2Ph), 4.74 d (1H, $J_{1,2}$ = 3 Hz; H-1); 7.29-7.39 m (5H; Ph), 7.02 s, 7.56 d, 7.73 t, 8.08 d, 8.12 d (6H, 4NH, NH_2). The benzyl glycoside (IV) was subjected to catalytic hydrogenolysis over 10% Pd/C at 35-37°C. The desired glycoside (I) was isolated with a yield of 90%, $[\alpha]_{546}^{20}$ +26° (c 0.50; acetic acid), IR (cm^{-1}, KBr): 3370-3250 (OH, NH_2, NH); 2900, 2830 (CH_2); 1630, 1530 (amide). The overall yield of the octadecylamide (I) amounted to 63%.

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COMPARATIVE STUDY OF AMINO ACID COMPOSITIONS OF FLAVOPROTEINS OF THE COTTON PLANT AND OF THE FUNGUS Verticillium dahliae

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A flavoprotein has previously been isolated from cotton seeds and some of its physicochemical properties have been studied [1]. An investigation of the analogous fraction of protein from the stems of 14-day cotton seedlings revealed a number of substantial differences between the flavoproteins from the seeds and the seedlings [2]. The flavoprotein from the stems consisted of two polypeptide chains and differed from the flavoprotein of the seeds in its amino acid composition.

The change in the amino acid composition of these proteins on the growth of the seeds may indicate the existence of a multiplicity of flavoproteins possessing identical electrophoretic mobilities. Moreover, in an electrophoretic study of the proteins of the fungus Verticillium dahliae Klbeb. – the causative agent of cotton wilt – it was found that a flavoprotein with a similar mobility was also present in this organism. The aim of the present work was a comparative study of the amino acid compositions of the flavoproteins isolated from the seeds of three species of cotton plant, from the leaves of 14- and 24-day seedlings, and from the mycelia of the fungus V. dahliae.

It can be seen from Table 1 that the flavoproteins isolated from the seeds of three species of cotton plant were similar in amino acid composition, although a considerable difference of the flavoprotein of the seeds of G. arboreum with respect to the leucine content may be mentioned. The flavoproteins isolated from the leaves of 14- and 24-day seedlings

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