The k-strophanthin-β obtained in this way (0.69 g, 34%) with mp 225°-233° C $[\alpha]_D^{19}$ +32.1 ± (c 0.73; methanol) was dissolved in concentrated sulfuric acid, giving a coloration changing with time as follows: 0 min – green, 7 min – light brown, 2 hr – yellow. Enzymatic hydrolysis gave cymarin (mp 184°-187° C $[\alpha]_D^{20}$ +35.8 ±3°; c 0.61; chloroform) and D-glucose. The latter was identified by paper chromatography. A mixture of the synthesized and natural glycosides gave no depression of the melting point.

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STRUCTURE OF LEONTOSIDE C

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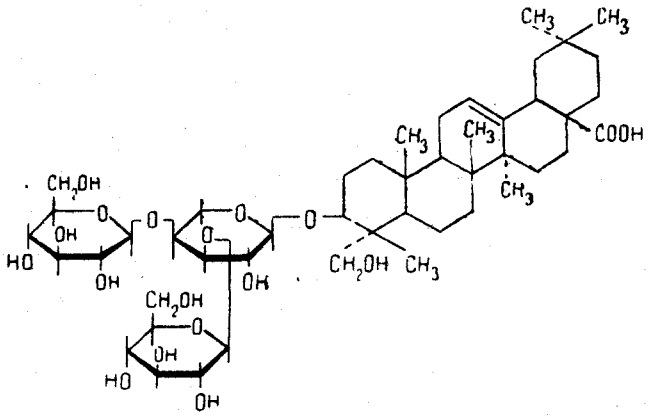
When leontoside C, a triterpene glycoside from Leontice eversmannii Bge. [1, 2] with the empirical formula $C_{47}H_{76}O_{18}$, was subjected to acid hydrolysis, hederagenin was identified as the aglycone, and of the monosaccharides D-glucose and L-arabinose were found in a ratio of 2:1.

The methylation of the glycoside with diazomethane and subsequent hydrolysis led to the methyl ester of hederagenin, which shows the presence of a free carboxy group in the trioside. The exhaustive methylation of leontoside C by Kuhn's method and acid hydrolysis of the resulting product gave the methyl ester of 23-O-methylhederagenin, 2,3,4,6-tetra-O-methyl-D-glucopyranose, and a monomethylarabinose. The latter gave a reaction with dimethylaniline trichloroacetate (violet coloration) which is characteristic for methylated aldoses with a free hydroxy group at C_4 [3]. This determines the position of one of the D-glucose molecules. In addition, the monomethylarabinose reacted with periodate reagent [4], which shows the presence in it of an α-glycol grouping and therefore the position of attachment of the second molecule of D-glucose. Consequently, the methylated arabinose that we isolated is 2-O-methylarabopyranose, and leontoside C has a branching in the carbohydrate chain, the link between the two glucose molecules and the pentose molecule being through the hydroxyls at C-3 and C-4 of the arabinose.

The undoubted genetic connection between leontosides B and C permits the assumption that in the latter the L-arabinose is attached to the aglycone by an α-glycosidic bond, and the D-glucose at C-4 by a L-arabinose-β-glycoside bond. The difference in the molecular rotations between leontosides C and B shows that D-glucose at C-3 of the arabinose is also connected by a β-glycosidic bond. Consequently, leontoside C is 4-(β-D-glucopyranosido-)-3-(β-D-glucopyranosido)-α-L-arabopyranosido-(3)-hederagenin and has the following structural formula:



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PHOSPHORUS CONTENT OF HUMAN PEPSIN AND GASTRICSIN

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We have carried out the determination of phosphorus (after mineralization) of samples of human pepsin and gastricsin purified on anion-exchange cellulose [2] by Filipowicz's method [1]. The purity of the samples of pepsin and gastricsin was shown by the results of a determination of the N-terminal amino acids. In the preparation of human pepsin, the only N-terminal amino acid was valine, and in the sample of gastricsin it was serine. To calculate the number of phosphorus atoms in the gastricsin molecule we used Tang and Tang's results [3] on the molecular weight of gastricsin (36 000). It was found that the gastricsin molecule contains one atom of phosphorus while human pepsin contains no phosphorus. At the same time, these enzymes possess similar catalytic activity [2, 4].

Consequently, the phosphate residue is not essential for the activity of the enzymes of the pepsin group [5-7].

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SYNTHESIS OF PEPTIDES ON A RESIN BY THE MIXED ANHYDRIDE METHOD

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At the present time we have shown that to create a peptide bond in the solid-phase method of peptide synthesis it is possible to use the mixed anhydride method with the readily accessible alkyl esters of chlorocarbonic acid [2].

As a model synthesis we used the tripeptide H-Gly-L-Phe-L-Ala-OH (I) [3].