A total of 22 components were identified in C. discolor, and 19 in S. chuni. The results of the analyses are given in Table 1.

The fractions studied contained as the main component 24-ethylcholest-7-en-3β-ol and were characterized by high amounts of $\Delta^{7,22}$-sterols and stannols. With respect to their sterol compositions, C. discolor and S. chuni did not differ essentially from the majority of other animals of this class. All the compounds identified, with the exception of the $C_{26}\Delta^{0}$ [1] and $C_{30}\Delta^{7}$ [2] compounds, have been detected previously in holothurians [2-4].

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SPECTROPHOTOMETRIC DETERMINATION OF DEOXYCORTICOSTERONE ACETATE

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Deoxycorticosterone is a mineralocorticosteroid the source of which is either the adrenal glands of slaughtered cattle or natural substances of steroid structure, especially cholesterol. In medicine, deoxycorticosterone is used mainly in the form of the acetate (DOCSA) for the regulation of the mineral metabolism; it increases the tonus and improves the working efficiency of muscles [1].

In spite of its wide use, the analysis of DOCSA has been inadequately developed. The methods that have been described for the photocolorimetric [2-4] and spectrophotometric [2, 5] determination of this drug are characterized by low sensitivity, inconveniences in performance, and lengthiness.

Our aim was to develop a highly sensitive procedure, simple in performance, for the quantitative determination of DOCSA. The proposed procedure is based on the reaction with isatin hydrazone. It has been established that DOCSA interacts with isatin hydrazone in dioxane with the formation of a yellow product. The intensity of the coloration is directly proportional to the amount of DOCSA in the sample under investigation and obeys Beer's law within the range of concentrations of 1.2-3.6 mg of substance in 100 ml of solution. The reaction was performed at the temperature of the boiling water bath with the use of a 1% solution of isatin hydrazone. Dioxane of ch.d.a. ["pure for anlaysis"] grade was used as the solvent for the reagent and for the compound to be determined. It is assumed that a hydrazone is formed during the reaction.

The reaction that we have developed has the following spectral characteristics: absorption maximum 445 nm; molar absorption coefficient 10,800; specific absorption 0.02899 $cm^1/\mu g$; Sandell's coefficient 0.03449; limit of detection 1.72 μg/ml.

The quantitative determination of DOCSA was carried out in the following way. An accurately weighed sample (0.015-0.044 g) of the substance was dissolved in dioxane in a 50-ml measuring flask, and solvent was added to the mark. To 1 ml of the resulting solution in test-tube was added 5 ml of a 1% solution of isatin hydrazone and one drop of 5% HCl. The test-tube was placed in the boiling water bath for 10 min and was cooled, and the contents were transferred quantitatively to a 25-ml measuring flask and made up to the mark with dioxane. In parallel under the same conditions, an experiment with a standard sample of DOCSA (0.0300 g in 50 ml of dioxane) and one with a solution of the background were performed. The optical densities of the colored solutions were measured relative to the background on a SF-26 spectrophotometer at 445 nm using a cell with a layer thickness of 1 cm.

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The percentage of DOCSA was determined from the formula

$$C = \frac{D \cdot 1250 \cdot C_0}{D_0 \cdot p \cdot l \cdot 1},$$

where D is the optical density of the solution being analyzed at 445 nm;

D_0 is the optical density of the solution of the standard sample of DOCSA;

C_0 is the concentration of the standard sample (0.000024 g/ml);

p is the weight of the sample, g; and

ℓ is the layer thickness, cm.

The results of the determination at p = 0.95 and n = 6 are given in the form of the following metrological characteristics: $\bar{X}$ = 99.93%, S = 0.4575, S_r = 0.00458, St = ±1.18, $\bar{X}$ ± St = 99.93 ± 1.18.

In comparison with known methods, the method developed is characterized by high sensitivity and simplicity of performance. The time of an analysis is 15-20 min.

A method has been developed on the basis of this procedure for the quantitative determination of DOCSA in 0.5% solution for injection.

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NEW APPROACH TO SYNTHESIS OF TRENBOLONE

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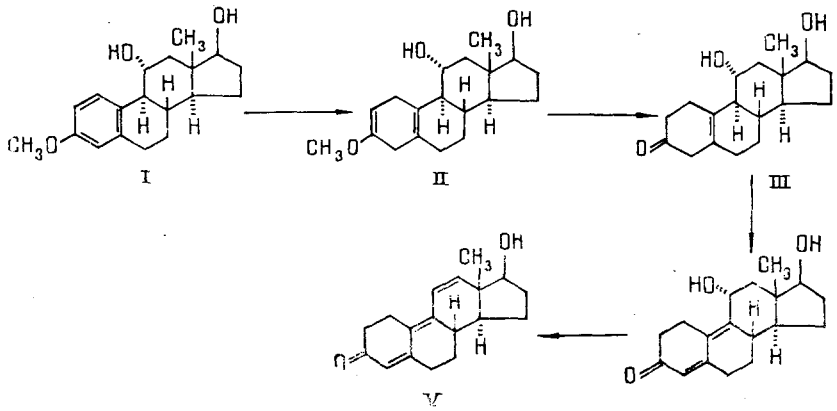
In recent years, the anabolic steroid 17β-hydroxyestra-4,9,11-trien-3-one (trenbolone), obtained by the scheme for the total synthesis of steroids proposed by Velluz [1] has been widely used in veterinary medicine. In the present paper we describe a new variant of the synthesis of trenbolone which is an extension of the Amanchenko-Torgov scheme for the total synthesis of esterone [2]. The key stage of the synthesis of trenbolone is the reduction of the known methyl ether of 11α-hydroxyestradiol [3] under the conditions of the Birch reaction [4].



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