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ISOLATION OF ASTEROSTEROL FROM THE SEA-CUCUMBER *Cucumaria fraudatrix*

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Sterols with 26 carbon atoms have recently been identified as minor components in marine organisms [1, 2]. The study of the steroid composition of the Far-Eastern sea-cucumber *Cucumaria fraudatrix* has shown an anomalously high content (10.1%) of a C_{26} component. For its identification, the total sterol fraction obtained by the usual method [3] was acetylated and the acetates were separated by column chromatography on KSK silica gel impregnated with 20% silver nitrate in the hexane–benzene system with a gradually increasing amount of benzene. The acetate of the C_{26} sterol with mp 134-136°C was isolated in the chromatographically individual state. GLC analysis was carried out on a Pye Unicam 104 chromatograph in 200 × 0.4 cm glass columns with 5% of SE-30 on Chromaton N-AW-HMDS at 280°C and a rate of flow of carrier gas (helium) of 20 ml/min.

The mass spectrum of this compound showed that it was a derivative of a C_{26}-diunsaturated steroid alcohol (M^+ 412) having double bonds in positions 22,23 (m/e 300) and 7,8 (m/e 273, 271, 255, 246, 229). The following signals appeared in the PMR spectrum, ppm: C_{18} – 0.54, s, 3 H; C_{19} – 0.81, s 3 H; C_{25}, C_{26} – 0.94, d 7 Hz, 6 H; C_{21} – 1.01, d, 6 Hz, 3 H; C_3 acetoxymethine proton – 4.45-4.85, m, 1 H; olefinic protons at C_7 – 5.15, m, 1 H; and C_{22}, C_{23} – 5.70, m, 2 H. A comparison of the spectral characteristics, constants, and retention times on GLC shows the identity of the sterol acetate isolated with the acetate 24-nor-5α-cholesta-7,trans-22-dien-3β-ol (asterosterol), obtained by the acetylation of the C_{26} sterol from the starfish *Asterias amurensis* [4].

Asterosterol has not previously been isolated from extracts of sea-cucumbers.

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