It is suggested that drugs and procedure preventing fatty liver should be tested also for their capacity to lower plasma FFA.

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Sex-associated Protein in Liver Tissue of the Rat

A protein component has been described[1-3] which appeared to be present in liver tissue of the male rat but absent from that of the female. The response of this substance to varied endocrine manipulation suggests that its presence or absence is dependent on the sex hormones, testosterone potentiating and oestradiol inhibiting the formation of the protein. Recently[4], this work has been confirmed and extended to show that progesterone also has an effect causing the appearance of the protein in the female and an increase in the amount found in the castrated male.

Investigations on this unusual protein have continued. The protein has been purified to the extent that a highly specific antiserum has been prepared. The reagent produces a single precipitin band when diffused in agar against the 105,000*g* supernatant[5] from liver homogenates. The sensitivity of the agar-diffusion techniques is such that it has become possible to detect the protein in livers of normal female rats. The concentration ratio is about thirty-two times less in the female than that in the male. Both single[6] and double[7] diffusion quantitative agar techniques give good agreement with this figure which, nevertheless, lacks precision because of its logarithmic nature. Stability problems associated with preparing the highly purified protein have prevented the accumulation of sufficient material to use more sophisticated quantitative methods and, thereby, to arrive at the absolute amounts present in tissue.

It would be of considerable interest to know if the sex-associated protein exists as a circulating entity in the blood. Thus far, it has not been detected there either chromatographically or by the much more sensitive immunochemical techniques.

It would seem that the adrenal glands are not directly concerned with this sex-associated phenomenon. The adrenalectomized female still responds to testosterone treatment, although rather poorly compared with the intact animal. Adrenalectomy seems to cause no significant change in the amount found in the male. The adrenalectomized male responds similarly to the intact male when treated with oestradiol.

Animals have been treated with oestradiol and testosterone simultaneously with the same dose schedule and proprietary preparations used previously[3]. Interestingly, the sex-associated component disappeared rapidly in the male similarly to that seen when oestradiol was given alone. At about 20 days after treatment, however, the longer lasting testosterone repository apparently caused a rapid reappearance of the component. A similar phenomenon occurred in the female, in which case the sex-associated protein began to be present in substantial amounts after about 20 days. These observations strengthen the argument for a direct-acting antagonism between the hormones and for a reciprocal dose relationship.

The physiological significance of the sex-associated protein is still unknown. Intuitively, it may be assumed to have considerable importance as judged by the comparatively large amounts found in adult male liver[3,4]. Experimentally, the protein may be of considerable value in investigating physiological processes in the liver. With the elimination of a necessary adrenal involvement, the evidence favours that of a direct response to sex hormones. In itself this provides a means for studying a highly specific response to hormone action in addition to studying the consequences of the action. Sensitive immunochemical techniques will be most valuable in further investigations on this sex-associated phenomenon.

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Carcinogenic Activity *in situ* of Further Steroid Compounds

There is more and more evidence coming from several research groups that a number of steroid molecules with no hormonal competence nevertheless possess carcinogenic properties. Ghiron[1], and later Cook *et al.*[2], obtained sarcomas with deoxycholic acid by subcutaneous injection in mice; cholesterol itself has been shown by Hieger[3] to produce a 12 per cent incidence of sarcomas, as against 0·8 per cent in control mice injected with the solvent alone. More recently, we recorded the activity of apocholic acid, a dehydration product of cholic acid; it gave sarcomas in 4 out of 42 mice, as compared with 0 per cent in 350 mice injected with the solvent alone[4]. Tumours have also been recorded by Bryson and Bischoff[5] in Marsh mice given testicular injections of cholesterol α-oxide. We wish now to report on the definite sarcomagenic activity of two further steroid molecules, one with a biochemical function, 7-dehydrocholesterol [in the form of its acetate (I)], the precursor of vitamin D_3, and the other, 3β-acetoxy-bisnor-Δ^5-cholenic acid (II), a product of the artificial oxidative degradation of several sterols and bile acids[6].

Sixty 3- to 5-month-old mice (28♀ and 32♂) of strain XVII *nc/Z* (Radium Institute) received subcutaneously, in the right flank, ten injections (with a 10-day interval between each) of 0·5 mg of 7-dehydrocholesterol acetate dissolved in 0·2 c.c. sterile neutralized olive oil. The first tumour was detected at the site of injection, 210 days after the first injection, in one male mouse out of the 52 surviving animals. Two other tumours developed in 392 and 482 days, in a male and female mouse respectively. In all