tetrahydroaldosterone possess approximately 1/500 the mineralocorticoid activity of aldosterone. These findings indicate that both of the reduced metabolites of aldosterone, 5α-dihydroaldosterone and 3α,5β-tetrahydroaldosterone, may well be important mineralocorticoids. The potential mineralocorticoid properties of these reduced metabolites of aldosterone may, however, be underestimated at this time since these compounds may well be cleared from the plasma and target tissue, the kidney, at different rates from native aldosterone, thus altering their bioavailability. We believe that the findings presented in this report are of considerable interest and lend support to the concept that some of the metabolites of aldosterone synthesized in the liver may possess significant biological relevance.

44. Progesterone-6,7-[^{3}H]: fate in proliferative and secretory endometria in presence of unlabelled progesterone

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Endometrial capability to biotransform 1 μCi of progesterone-6,7-[^{3}H](P-[^{3}H]), in the absence as well as in the presence of 10 and 100 μg/ml of unlabelled progesterone (P), was assayed *in vitro*. Metabolite formation was studied at 6, 24, 48 and 72 h incubation intervals. Also, total characterization of previously undescribed P-[^{3}H] metabolites was performed in extracts from endometria incubated with 4.4 μCi of P-[^{3}H] for a 72 h period. P-[^{3}H] derivatives reduced at C-5 and C-20 were found in lower proportions than polar unconjugated and water soluble conjugates in both, proliferative and secretory endometria. Higher concentrations of P inhibited metabolite formation. The newly identified P-[^{3}H] derivatives are: 4-pregnene-3,11,20-trione, 17α-hydroxy-4-pregnene-3,20-dione and the glucuronide of 3β-hydroxy-5α-pregnane-20-one. It is thought that similar events might occur in endometria continuously exposed to P released from intrauterine devices. Also, conjugate formation might play a role in local regulatory processess.

45. Peculiarities of steroid compound transformation by microorganisms trapped in polyacrylamide gel

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The ability of various microbial cells trapped in polyacrylamide gel to perform 1,2-dehydrogenation and 1,2-hydrogenation, 20α- and 20β-reduction and 17β-reduction has been investigated. 1,2-dehydrogenase activity of immobilized and free *Mycobact. globiforme* cells is the same (1,2g prednisolone/g cell/h). 1,2-hydrogenase and 20β-hydroxysteroiddehydrogenase activities (20-OSD) of immobilized *M. globiforme* cells are higher than those of free cells, but less stable than 1,2-dehydrogenase activity of immobilized cells. 20α- and 20β-OSD activity of *Bac. megatherium* cells and 17β-OSD activity of *Sacch. cerevisiae* cells trapped in gel were shown to be unstable and lower than those of free cells, which is assigned to rapid autolysis of these cells in gel. The rise of dehydrogenase activity and its stability has been observed after periodic incubation of immobilized cells of *M. globiforme* and *S. cerevisiae* in nutrient aerated medium with inducer. These changes of enzymic activity were due to the increase in the amount of intact cells on the surface of the gel and the stability of the cell ultrastructure inside the gel.

46. Effects of age and FSH on capacity of Sertoli cells from immature rats to convert progesterone (P) to 20α-hydroxy-pregn-4-en-3-one (20-HP), 3α-hydroxy-5α-pregnan-2o-one (3-HP) and 5α-pregnan-3,20-dione (P-DIONE)

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Sertoli cells isolated from 6, 10, 17, 32 and 65 day old rats, were incubated with [^{14}C]-P for periods of 1, 3, 6, 20 and 48 h. In addition, Sertoli cells isolated from 6, 10, 17 and 25 day old rats were incubated with FSH and [^{3}H]-P. The extracted radioactive products were identified by autoradiography, thin layer and gas chromatography, derivative formation and crystallization with authentic steroids. Conversion of P to 20-HP, 3-HP and P-DIONE was age dependent. Maximum conversion to 20-HP (15.2%; 1370 ng/mg protein), 3-HP (3.8%; 317 ng/mg) and P-DIONE (1.2%; 193 ng/mg) occurred in cells from 10 day old rats; cells from 65 day old rats produced no detectable amounts of 20-HP and conversion to 3-HP and P-DIONE was greatly reduced. Sertoli cells from 10 day old rats responded to FSH with significant (2 to 2.7 fold) increases in conversion of P to 3-HP and P-DIONE but the FSH response was greatly reduced or absent in 25 day old rats. 20-HP showed no significant increases due to FSH treatment. The peak steroidogenic activity and FSH sensitivity of Sertoli cells may be related to the onset of gametogenesis.

47. *In vitro* metabolism of [^{3}H]-andsoetenedione in the rat epididymis

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The object of the present study was to examine *in vitro* the metabolic fate of [^{3}H]-androstenedione (4-androsten-3,17-dione) (A) in the epididymis and vas deferens (V) of the rat. Tissue homogenates of caput (Ca) and cauda (Cd) epididymides and V were extracted with diethyl-ether and analysed by gas–liquid chromatography interfaced with a radio-gas detector system. Incubation of slices of Ca for 2 h at 34°C metabolised 90% A. Similar incubations of tissue samples from Cd and V metabolised 60 and 25% of A, respectively. The major metabolites formed in the epididymis were 5α-androstane-3,17-dione (5α-androstanedione: Ca: 48%; Cd: 33%) and 3α-hydroxy-5α-androstan-17-one (androsterone: Ca: 35%; Cd: 13%). These metabolites appeared at a much lower concentration in the incubations with V (about 8% each). In general, conversion to testosterone (17β-hydroxy-4-androstene-3-one) and dihydrotestosterone (17β-hydroxy-5α-androstane-3-one) was very low (2–4%) in all three organs examined. Castration did not significantly alter the metabolic pattern in the Ca epididymis and V but promoted the formation of androsterone (38%) in the Cd epididymis. Androsterone appears to be one of the important androgenic metabolites formed in the epididymis of rat.

48. Different metabolism of testosterone in human and rat liver

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The metabolism of [^{3}H]-testosterone (T) to hydrogenated and glucuronic metabolites in tissue slices and subcellular fractions from human and rat liver was studied. Testosterone (T) and metabolites were separated and determined