boys the mean SHBG concentration dropped from 7.7 mg/l seen at pubertal stage I to 3.1 mg/l at pubertal stage V. A decline, although not so steep as seen among the boys, was also noted in sexually maturing girls.

91. Androgen receptor in the bursa of Fabricius

MICHEL, G. H. and BAULIEU, E. E., Department of Endocrinology, Centre Hospitalier de Luxembourg and U.33 INSERM Bicêtre, France

By glycerol gradient ultracentrifugation analyses an "8S" radioactive peak could be demonstrated in the cytosol of the bursa of Fabricius from 12-day-old chicken embryos after labelling with [^{3}H]-androstanolone 1 nM. An excess of 100 nM unlabelled androstanolone completely suppressed the radioactive peak, while the inhibition was important but not complete with 100 nM unlabelled cyproterone acetate. Previous heating of the cytosol at 37 C for 40 min completely prevented the binding of radioactive androstanolone. With another technique, Sephadex G-25 chromatography and after labelling the cytosol with [^{3}H]-androstanolone or [^{3}H]-testosterone the presence of a radioactive excluded fraction which was suppressed by an excess of unlabelled testosterone was shown. So by two different techniques a high affinity, saturable, "8S", macromolecular component which had the different characteristics of a classical androgen cytosol receptor could be demonstrated in the cytosol of the bursa of Fabricius of 12-day-old chicken embryos. 17β-estradiol, androstenedione and progesterone inhibited the binding of androgens but diethylstibestrol, cortisol and dexamethasone did not. An identical androgen receptor was found to be present in the cytosol of the bursa of Fabricius from quail embryos. The bursa of 12-day-old chicken embryos contained 70 fmol/mg of protein and 420 fmol/mg of nuclear DNA. Dissociation experiments of the epithelium from endodermal origin and the mesenchymal part of the bursa showed that the number of receptor sites was greater in the epithelium. In other tissues of the same embryos such as lung and small intestine the number of binding sites was much lower (4 fmol and 2.5 fmol/mg of protein). These experiments are in favour of a direct mode of action of androgens on this lymphopoietic organ and could possibly explain the inhibition of the development of the bursa when androgens are injected in the incubated egg and also the role of those hormones in the normal involution of this organ.

92. 5α-Dihydrotestosterone (5α-DHT)-specific binding proteins in the plasma and reproductive tract of the male goat

JEGOU, B. and CHEMINEAU, Ph., I.N.R.A., Station de Physiologie de la Reproduction 37380 Nouzilly, France

Previous studies have shown that the seminal plasma of the adult goat contains a 5α-DHT-specific binding protein. The aim of this study was to determine if this specific binding protein has, like most of the proteins in seminal plasma in many species, a plasmatic origin (via the accessory glands) or a testicular origin (via the epididymis) or both. This work was carried out on adult goats using the polyacrylamide gel electrophoresis method. Preliminary investigations demonstrated the presence of a sex steroid binding protein (SBP) with a R_F of 0.3, in the blood plasma. In addition, the presence of a specific binding protein (R_F = 0.3) in the seminal plasma of such animals was confirmed. Furthermore, the presence of androgen binding protein (ABP) with the same R_F was also demonstrated in the cauda epididymal plasma. As SBP and ABP appeared to have the same R_F, we looked for a specific binding protein in accessory gland plasma of vasectomised goats and seminal plasma of cowperectomised, vesiculectomised goats. Under these conditions, no specific binding protein was found in the seminal fluid of vasectomised animals, whereas an ABP (R_F = 0.3) has been demonstrated in the seminal plasma of animals without cowper's glands and seminal vesicles. Consequently, the specific binding protein identified in the seminal plasma has a testicular origin via the epididymis.

93. Specificity and cross-reactivity of primate sex steroid binding plasma protein (SBP)

RENOIR, J. M., BAULIEU, E. E. and MERCIER-BODARD, C., Laboratory of Hormones, 94270 Bicêtre, France

The presence of SBP in several vertebrate species has been confirmed for several species and detected in many others, by measurement of specific [^{3}H]-dihydrotestosterone ([^{3}H]-DHT) binding in plasma. Cross-reactivity between the monospecific anti-human SBP anti-serum and plasma from different species studied by immunoelectrophoresis and immunodiffusion occurred only with primate plasma. Moreover, total identity is obtained only between man and Pongidae (chimpanzee) whereas partial indentity is observed with other monkeys.

The similarities between human and monkey SBP were also evident in terms of steroid binding specificity: DHT > 5α-androstane-diols > testosterone > estradiol. However the affinity of estradiol and estrone increased from man to new world monkeys. (Estrone is not bound by human SBP.)

It would appear that human and monkey SBP display a number of common antigenic determinants which increase progressively in the evolutionary scale, from prosimii to old world monkeys, becoming identical between chimpanzee and man.

94. Effects of progesterone on D-amino acid oxidase *in vivo* and *in vitro* studies

AHMED, F. and BAMJI, M. S., National Institute of Nutrition, Hyderabad, India

Progesterone has been shown to inhibit purified hog kidney D-amino acid oxidase (DAAO). In rat kidney homogenates progesterone was found to have two effects on DAAO activity—an inhibitory effect in the absence of FAD and either a stimulatory effect or no effect in the presence of added FAD. Apo-DAAO prepared by charcoal treatment of crude homogenate could be activated by *in vitro* addition of FAD. Progesterone did not inhibit this activation. Data suggest different effects of progesterone on DAAO, apo and holo enzymes. Ovariectomy did not produce a change in the kidney DAAO, although in the liver the enzyme activity showed a slight tendency to decrease. Ovariectomy led to a greater *in vitro* inhibition of kidney DAAO by progesterone. Intraperitoneal progesterone injection (10 mg/kg body weight) to ovariectomised animals reversed this effect.

95. Progestin mediated modulation of steroid hormone receptors

KASID, A. and LAUMAS, K. R., Department of Reproductive Biology, All India Institute of Medical Sciences, New Delhi, India

The influence of progestins like norethindrone and norethindrone acetate on receptor concentrations for estradiol