## SHORT PAPERS

1

### LEVELS OF FOETAL STEROID BINDING PROTEIN ARE REDUCED IN A FEMALE POPULATION AT INCREASED RISK OF BREAST CANCER.

Alastair Forbes, Mark L. Wilkinson, M. Jawed Iqbal, J.W. Moore*, R.D. Bulbrook*, Roger Williams.

Liver Unit, King's College School of Medicine and Dentistry, London SE5 8RX and *Dept. of Clinical Endocrinology, Imperial Cancer Research Fund, London WC2A 3PX.

A number of reports describe raised serum free oestradiol in women with breast cancer and in populations at greater risk of this malignancy, unexplained by differences in concentration of albumin or sex hormone binding globulin (SHBG). Our previous work using a ligand binding assay, which necessitated partial purification of serum suggested that lower levels of the newly described specific androgen and oestrogen binding protein, foetal steroid binding protein (FSBP) might be responsible. A larger series employing a new enzyme-linked immunosorbent assay (ELISA) now confirms the earlier results. FSBP was purified to homogeneity by affinity chromatography and a polyclonal antibody was raised which shows no crossreactivity with human serum albumin or SHBG. An ELISA was developed which has a sensitivity of 30 fmol per well with intra- and interassay coefficients of variation of 8.0% and 9.2% respectively. Sera from 32 healthy British women were compared with those from 26 closely matched Japanese women. The mean FSBP level of 31.4 nM ($\pm$ 11.14 SD) in British women was significantly lower than the level of 41.7 nM ($\mp$ 14.49 SD) in the Japanese ($p < 0.0025$). These data indicate a possible mechanism for lower free oestradiol in populations at lower risk of breast cancer, and may thereby have significance in the aetiology of this malignancy.

2

### A FACTOR OBTAINED FROM THYMUS INFLUENCES THE IN VITRO TESTOSTERONE SECRETION OF LEYDIG CELLS IN THE RAT.

Enrique Pedernera, Jorge Díaz-Osuna and Mario Calcagno.
Departamento de Embriología y Departamento de Bioquímica. Facultad de Medicina, Universidad Nacional Autónoma de México, México 04510, D.F., México.

Previous studies from other authors demonstrate that the absence of thymus in the newborn produces changes in the structure of gonads of mature mice and rats. We studied the existence in the rat thymus of substances which could modify the endocrine function of Leydig cells. Thymus extracts obtained from 15-day-old rats were fractionated through molecular sieve chromatography, fractions were assayed in vitro by changes produced in the testosterone secretion of Leydig cell suspensions obtained from adult rat testes. Fractions corresponding to 27-28000 mol wt of the thymus extract diminish the testosterone secretion of Leydig cells stimulated with hCG. No changes in the basal testosterone secretion were produced by the presence of the thymus fractions. The inhibitory effect is dose related and persist during 180 min of incubation. Fractions of the same mol wt obtained from liver, heart and spleen do not modify the testosterone secretion of Leydig cells. The inhibitory activity of the thymus factor disappears after trypsin treatment. Further fractioning in preparative flat bed electrofocusing makes manifest that the inhibitory activity is focused at pH 4.7. The active factor was not retained by a Concanavalin A-Sepharose column. The data demonstrate the existence in the rat thymus of a factor, probably a polypeptide, which modifies the in vitro hCG response of a testis cell suspension.

This work was supported by Consejo Nacional de Investigaciones Científicas y Técnicas (CONACYT), PCCBBNAL 005024.