capable of steroid metabolism. They differ in the steroid enzyme pattern. This enzyme pattern changes during development.

79. **Steroid hormones production of the embryonic chick ovary,** C. T. TENG and C. S. TENG, Department of Cell Biology, Baylor College of Medicine, Houston, Texas, U.S.A.

Ample evidence has shown that steroidogenesis begins early in the embryonic chick ovaries and the hormones secrete from the ovary effect the sexual differentiation of the Mullerian ducts in the embryonic chicks. Therefore, the amount and types of the steroid hormone secreted from the developing embryonic ovary are critical for the sex tract development. By radioimmunoassay, we were able to detect precisely the amount of steroid released into the culture medium from the embryonic left and right ovaries during organ culture. Approximately 20 mg of ovarian tissue from 15-day-old embryos were cultured in 1 ml of Hanks' solution at 41°C for 4 h, the amount of estradiol (E_2) and testosterone (T) released from the left ovary into the culture medium were 165 pg and 11·8 pg per ovary respectively. With the presence of 100 IU of HCG in the culture medium the amount of E_2 and T released into the medium were 500 pg and 98 pg per ovary respectively. Steroid hormone production from the 15th day embryonic ovary in response to HCG stimulation was dosage dependent. In the presence of 20 IU of HCG in the culture medium could cause maximum effect on both E_2 and T production. With the presence of 1 mM dibuyl crclic AMP in the culture medium causes the same effect as 20 IU HCG does. When MIX (a potent phosphodiesterase inhibitor) was also present in the culture medium the steroid production was enhanced to 758 pg of E_2 per ovary. The involuting right ovary of the 15th day embryonic chick also releases steroid hormones into the culture medium, yet in a significantly lower amount. Right ovary responses to HCG stimulation with 250% increase in E_2 production and 800% increase in T production. This report suggested that the 15th day embryonic ovaries (developing and involuting ones) produced steroid hormones and responded to gonadotropic hormone stimulation, and the gonadotropic hormone action probably mediated through cyclic AMP. (Supported by NIH Grant HD-08218-03).