304 Study on estrogen production in parenchymatous cells of epithelial ovarian tumor. Y.Matumoto, K.Tamura, F.Ito, N.Kawamura, S.Yamagata, T.Sugawa, K.Yamamoto*, Osaka City University *Shirokita Hospital

We have already reported that many epithelial ovarian tumors of post menopausal patients are potent in producing estrogen(E) which is synthesized by stromal cells of the tumors. This study was aimed to study the possibility if epithelial cells produce E using combined laboratory techniques. Histochemical demonstration of its rate-controlling enzyme 3ß-hydroxysteroid dehydrogenase (3ß-HSD) proved E synthesis in the epithelial cells. In addition tumor tissues were stained immunohistochemically for the presence of precursor substances of E. Futher more we stained ER as well as 3ß-HSD by double imunoenzymatic techniques. Electron microscopy revealed that 3ß-HSD existed in epithelial cells of ovarian tumors. The finding of the coexistence of this enzyme and E as well as its precursors was interpreted as indicating that an E-producing mechanism exists in parenchymatous cells of ovarian tumors. Moreover the demonstration of ER in E-containing cells was considered as evidence to suggest the existence of some autocrine mechanism operative in ovarian tumor cells.

305 Estrogen production in postmenopausal ovarian tumors. T.Noguchi, J.Kitawaki, M.Fukuoka, S.Inoue, T.Tamura, T.Yamamoto, H.Okada, Dept.Obst.and Gynec., Kyoto Prefectural Univ.Med., Kyoto.

Aromatase activity (AA) and P-450arom were examined in 43 untreated ovarian tumor tissues of postmenopausal women with regard to the status of progesterone receptor (PR), estrogen receptor (ER) and serum steroid levels. AA was determined by $[^3H]$-H_2O release after incubation of 105,000× g pellet of tissue homogenate with [1β- ^3H]androstenedione and NADPH. P-450arom, PR and ER were determined by the corresponding EIAs. AA was detected in 81% tumors and immunostaining with anti-P-450arom antibody revealed the existence of estrogen-producing cells. AA in PR-positive tumors were significantly higher than AA in PR-negative tumors ($p<0.002$). Most benign tumors were PR-positive with high AA, while most malignant tumors were PR-negative with low AA. AA correlated with P-450arom levels, but not with ER, estrone, estradiol, androstenedione or testosterone levels. These results suggest that postmeonopausal ovarian tumors have substantial ability to produce estrogens and that AA may be related to the status of steroid receptors and histological types.

306 Clinical significance of determination of serum manganese superoxide dismutase in ovarian carcinoma. M.Ishikawa, T.Nakata, S.Saitoh, T.Shimizu, K.Yamashita*, T.Kanemoto*, H.Domon**, H.Kamiya***, N.Taniguchi****, Dept.Obst. and Gynec., Asahikawa Med.Coll., Asahikawa, *Dept.Obst.and Gynec., Sapporo Nat. Hosp., Sapporo, **Dept.Obst.and Gynec., Sapporo Kohsei Hosp., Sapporo, ***Dept. Obst.and Gynec., Sapporo Tonan Hosp., Sapporo, ****Dept.Biochem., Osaka Univ. Med.Sch., Osaka.

A monoclonal antibody against manganese superoxide dismutase (Mn-SOD) was assessed for its use in detecting a marker for epithelial ovarian carcinoma. 37 of 62 patients (59.7%) with surgically demonstrated epithelial ovarian carcinomas had elevated levels of Mn-SOD (cut off value:130 ng/ml). The serum levels of Mn-SOD increased in accordance with the advance of clinical stage and were also correlated with the effect of therapy. Compared with CA-125, Mn-SOD showed a lower false positive rate in benign gynecological disease. Determination of Mn-SOD level promises to provide a clinically useful marker in epithelial ovarian carcinomas for the monitoring of the response of treatment and early detection of recurrences.