

#3761 Serum prostate specific antigen levels are elevated in females with breast cancer. Black M.H., Gial M., Yu, H., and Diamandis E. P. *Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, Canada, M5G 1X5, Department of Gynecologic Oncology, University of Turin, Turin, Italy, 10128, Diagnostic Systems Laboratories, Webster, TX 77598.*

Prostate specific antigen (PSA) is a 33-kDa serine protease initially thought to be secreted exclusively by prostate epithelial cells. Numerous studies have reported the presence of PSA in female breast tumor cytosolic extracts and breast cystic fluid, as well as in normal breast and endometrial tissue. In accordance with the dependence of PSA gene transcription on steroid responsive elements present in the promoter, tissue culture studies have demonstrated that PSA production in breast cancer cell lines is mediated through the action of steroid receptors. The purpose of the present study was to quantitate PSA levels in female patients with various endocrinopathies using an ultrasensitive PSA immunofluorometric sandwich assay with a detection limit of 1ng/L. Sera from 93 patients with breast cysts, 118 patients with uterine fibroids, 175 breast cancer patients pre- and post-surgery, and 100 healthy females were analyzed for PSA. Using the Wilcoxon rank sum test, a significant difference ($p < 0.009$) in PSA levels was found between healthy women and women with each affliction. While less than 25% of healthy females had PSA levels of 2 ng/L or more, levels above this value were detected in 74% of breast cancer patients before surgery, 60% of breast cancer patients after surgery, 63% of breast cyst patients, and 46% of uterine fibroid patients. A significant difference in PSA levels was also found in breast cancer patients before and after surgery ($p < 0.02$). Further studies are now being performed to assess the diagnostic, prognostic, or monitoring value of female serum PSA.