

#1767 PSA levels in nipple aspirate fluid are upregulated by progesterone. Sauter, E., Zarghami, N., Diamandis, E., and Engstrom, P. *Fox Chase Cancer Center, Philadelphia, PA 19111, Mount Sinai Hospital, Toronto, Ontario, M5G 1X5 Canada*

Prostate specific antigen (PSA) production in the prostate is regulated by androgens through the androgen receptor. We have recently demonstrated that PSA is produced by both normal and malignant breast tissue, and that PSA expression in fluid aspirated from the nipple (nipple aspirate fluid, NAF), correlates with breast cancer risk. Based on the fact that PSA levels in the breast correlate with the presence of estrogen and progesterone receptors, we hypothesized that PSA in NAF would be regulated by female steroid hormones. Three women (2 pre-, 1 postmenopausal) with normal breast cancer risk (no breast surgery, no family history) underwent nipple aspiration of the breast and phlebotomy every three days for one month to evaluate the influence of serum estradiol (E2), progesterone (PG), luteinizing hormone (LH), and follicle stimulating hormone (FSH) levels on PSA in NAF. In the premenopausal women, PSA levels in the nipple aspirate fluid were highest in the mid luteal phase, in conjunction with the peak in serum progesterone levels. By contrast, in the postmenopausal subject, neither PSA levels in NAF nor serum progesterone levels changed significantly over time. E2, LH and FSH levels did not correlate with changes in PSA. These preliminary data suggest that progesterone stimulates the production of PSA in the breast.