

#2505 Expression of a prostate-associated protein, human glandular kallikrein (hK2), in breast tumors and in normal breast secretions. Obiezu, C.V., Black, N.H., Maglara, A., Levesque, M.A., Sutherland, D.J.A., Tindall, D.J., Young, C.Y.F., Sauter, E.R., and Diamandis, E.P. *Mount Sinai Hospital, Toronto, ON M5G 1X5 Canada; University of Toronto, Toronto, ON M5G 1L5 Canada; Mayo Clinic/Foundations, Rochester, MN 55905; Fox Chase Cancer Center, Philadelphia, PA 19111.*

The recent demonstration of hK2 expression in a breast carcinoma cell line has suggested that this putatively prostate-restricted, steroid regulated protease may also reside in the mammary duct system. Our purpose was to examine the expression pattern of both hK2 and PSA in breast tumor tissues. Cytosolic extracts of 336 primary breast carcinomas prepared for routine estrogen receptor (ER) and progesterone receptor (PR) analysis, as well as 31 nipple aspirates from 6 women with non-diseased mammary glands, were assayed for hK2 and PSA using immunofluorometric assays. In the tumor extracts, measurable hK2 and PSA concentrations were detected in 53% and 73% of cases, respectively, and were positively correlated to each other ($r = 0.59$, $P < 0.01$). Higher concentrations of PSA and hK2 were found in tumors expressing steroid hormone receptors, and both PSA ($r = 0.25$, $P < 0.01$) and hK2 ($r = 0.22$, $P < 0.01$) correlated directly with PR levels. Both proteins were present in nipple aspirate fluid at relatively high concentrations which were positively correlated ($r = 0.53$, $P = 0.002$). Together these data provide the first evidence, to our knowledge, that both malignant breast tissue and normal breast secretion contain measurable quantities of hK2, and that the degree of hK2 expression or secretion is directly proportional to the expression of PSA and steroid hormone receptors. hK2 expression may therefore be a marker of steroid hormone action in breast tissue.