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**Immunoreactive prostate specific antigen in breast cancer cytosols and its association with steroid hormone receptors.** Yu, H., Diamandis, E.P., Sutherland, D.J.A. University of Toronto, Toronto, Ontario M5T 2S8. Prostate specific antigen (PSA) is thought to be produced exclusively by prostatic tissue. Based on our recent study of 525 breast cancer patients, we found that 30% of breast cancer cytosols contained PSA immunoreactivity (IR-PSA) when a cut-off level of 0.03 ng/mg total protein was used. To confirm this finding, we analyzed another series of breast cancer cytosols for PSA from 744 patients. A similar IR-PSA positivity rate was observed. Combining the two series of patients to examine the association between PSA positivity rate and presence of steroid hormone receptors in breast cancer, we found that IR-PSA was associated with either ER-positive or PR-positive cancers. Further analysis of receptor status, classified as ER(-)/PR(-), ER(+)/PR(-), ER(-)/PR(+), and ER(+)/PR(+), revealed a significant association of IR-PSA with PR but not with ER. We also found that IR-PSA positivity rate declined with patient's age. No IR-PSA was detected in 6 male samples. This study confirms the presence of IR-PSA in breast cancer and its association with steroid hormone receptors, specifically the progesterone receptor. The relationship between IR-PSA and steroid hormone receptors in breast cancer may indicate a potential clinical implication of IR-PSA.