alternatively spliced forms of the KLK15 gene. KLK15 is primarily expressed in the thyroid gland, and to a lower extent in the prostate, salivary and adrenal glands, colon, testis and kidney. Our results indicate that the expression of KLK15 is up-regulated by steroid hormones in the LNCaP prostate cancer cell line. KLK15 is structurally related to its adjacent gene, PSA. Based on the established role of KLK3 (PSA) in prostate cancer diagnosis and monitoring, and on being hormonally regulated in prostate cancer cell lines, we hypothesized that KLK15 is differentially regulated in prostate cancer. We examined 20 matched pairs of normal and prostate cancer tissues from the same patient and found that the KLK15 gene is up-regulated, at the mRNA level, in prostate cancer in comparison to the normal matching prostatic tissue. KLK15 up-regulation was found to be associated with more aggressive forms of prostate cancer. We conclude that this newly discovered gene has potential of being used as a diagnostic and/or prognostic marker for prostate cancer.

#4017 Molecular Cloning of a New Human Kallikrein Gene, KLK15, Which is Up-Regulated in Prostate Cancer. George M. Yousef, Andreas Scorilas, Klaus Jung, Linda Ashworth, and Eleftherios P. Diamandis. *Humboldt University, Berlin, Germany, Lawrence Livermore National Laboratory, Livermore, CA, and University of Toronto, Toronto, ON, Canada.*

Kallikreins are a subgroup of serine proteases with diverse physiological functions. Growing evidences suggest that many kallikreins are implicated in carcinogenesis. By using the positional candidate gene approach, we identified a new human kallikrein gene, tentatively named KLK15 (for kallikrein 15 gene). This new gene maps to chromosome 19q13.3-q13.4 and is located between the KLK1 and KLK3 (PSA) genes. KLK15 is formed of five coding exons and four introns, and shows structural similarity to other kallikrein genes. We further identified three