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Presentation Title:	**Differential expression of the human kallikrein gene 6 (KLK6) in various malignancies**
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Kallikreins are a family of 15 serine proteases clustered together on the long arm of chromosome 19. Recent reports have linked kallikreins to malignancy. The *human kallikrein gene 6* (*KLK6*) is a newly characterized member of the human kallikrein family. Recent work has focused on the possible role of this gene and its protein product as a tumor marker and its involvement in diseases of the central nervous system.

We analyzed the expression pattern of *KLK6* in normal and cancer libraries from different databases of the Cancer Genome Anatomy Project. Information from the Serial Analysis of Gene Expression (SAGE) databases indicates that *KLK6* is down-regulated in breast cancer tissue. *KLK6*-specific tags are detected in only 8% of cancer libraries compared to 38% of normal breast libraries. The average expression density (estimated as tags per million, tpm) is also significantly higher in normal than cancer (270 tpm *vs.* 15 tpm, respectively). We also found a significant up-regulation of *KLK6* in ovarian cancer compared to normal ovarian tissues. While no expression is detectable in the normal ovary, 50% of the ovarian cancer libraries show high levels of expression of the *KLK6*-specific tags (average 262 tpm). Up-regulation of the gene is also detected in colon and pancreatic cancer tissues compared to their normal counterparts. Gene-specific tags are detectable in 67% of stomach cancer libraries, compared to no expression in normal gastric tissues. The average expression density in pancreatic cancer is five times higher compared to normal pancreatic tissue. While expression is undetectable in normal colon, 33% of colon cancer libraries are positive for the gene. Expression rates are, on the other hand, significantly lower in brain tumors (13% with an average density of 18 tpm) compared to normal brain (88% with an average density of 39 tpm). No significant variation is found in expression levels between normal and cancerous prostatic tissues. Experimental verification of these results is warranted.

The EST expression profile of *KLK6* shows that the gene is up-regulated in gastrointestinal malignancies, including stomach, colon, esophagus and pancreatic cancers. Sixty-four clones are isolated from five stomach cancer libraries, and 16 clones from nine colon cancer libraries. These results support the SAGE data. This up-regulation is also evident in ovarian and uterine tumors (20 and 5 clones identified, respectively).

Significant numbers of clones are also identified from head and neck cancers (15 clones) and myeloma (12 clones) libraries. For breast cancer, higher number of clones are isolated from normal tissues compared to breast adenocarcinoma. Also, while 22 clones are isolated from 8 normal brain libraries, only two clones are identified from a glioblastoma library.

We conclude that *KLK6* is differentially expressed in various malignancies and may represent a biomarker for cancer detection and/or prognosis.

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