Prostatic Adenocarcinoma Cells Expressing or Lacking the Tumor Suppressor Gene PTEN

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Technology description

Summary

PTEN is a tumor suppressor gene that is frequently deleted or mutated in a variety of human cancers, including prostate, breast, endometrial, lung, and ovarian cancers. In prostate cancer cells, PTEN deletion is the most common event observed. The loss of PTEN is thought to play and important role in tumor cell proliferation and metastasis due to a lack of control of the signaling pathways that mediate cellular processes such as apoptosis and migration. Previously PTEN had been shown to down regulate cyclin D1 expression as well as regulate p53 protein levels and transcriptional activity, and recently the inventors of this technology have shown that PTEN decreases surface IGF-IR protein levels in prostate cancer cell lines in an Akt-independent manner.
PC3 cells are prostate cancer cells that lack PTEN gene. This technology describes PC3 cells that overexpress the PTEN gene. These cell lines can be used to study the role of the PTEN gene in cancer growth and metastasis.
Market:
Prostate cancer is the most common type of cancer found in American men, and it has been estimated that there were more than 230,000 new cases in the US in 2007. Prostate cancer is also the second leading cause of cancer death in men.
In the US over 2 million women have been treated for breast cancer and with more than 200,000 women diagnosed in the year 2007 alone. Breast cancer is the second leading cause of cancer death in women.

Institution

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