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JOHNS HOPKINS RESEARCHERS DISCOVER LINK BETWEEN A PROTEIN AND AGGRESSIVE, RECURRING PROSTATE CANCER

Their findings may eventually be used to predict which cancers are likely to return

In a study to decipher clues about how prostate cancer cells grow and become more aggressive, Johns Hopkins urologists have found that reduction of a specific protein is correlated with the aggressiveness of prostate cancer, acting as a red flag to indicate an increased risk of cancer recurrence. Their findings are reported online in the Proceedings of the National Academy of Sciences on Aug. 27, 2012.

The team focused on a gene called SPARCL1, which appears to be critically important for cell migration during prostate development in the embryo and apparently becomes active again during cancer progression. Normally, both benign and malignant prostate cancer cells express high levels of SPARCL1, and reduce these levels when they want to migrate. The team correlated this reduction or "down regulation" of SPARCL1 with aggressiveness of prostate cancer.

"Our findings should allow physicians to not only pinpoint those patients whose cancers are destined to return after surgery, but could also reveal a potential new option for treatment," says Edward Schaeffer, M.D., Ph.D., an associate professor of urology, oncology and pathology at the Johns Hopkins University School of Medicine and co-director of the Johns Hopkins Prostate Cancer Multidisciplinary Clinic.

In their study, Schaeffer and lead investigator Paula Hurley, Ph.D., also found that SPARCL1 seems to play a role in predicting tumor recurrence in a number of other diseases including bladder, breast, colon, rectum, tongue, lung, skin and ovarian cancers.

The team is now working to decipher the specific mechanism that controls the gene in hopes of developing a treatment that can reset SPARCL1 to normal levels and potentially prevent a patient's cancer from recurring. Hurley is currently investigating novel genes that are not only prognostic of lethal prostate cancer but also contribute to prostate cancer progression to metastasis.

According to the American Cancer Society, about 240,000 men in the United States are expected to be diagnosed with prostate cancer this year; the majority are over age 65. The disease is the

second leading cause of death among U.S. men. An estimated 28,000 men in the U.S. will die of prostate cancer this year.

“While many of our patients are initially cured with surgery, some inexplicably have their cancers return,” says Schaeffer. “We are working to identify patients at higher risk of recurrence and our ultimate goal is to develop new treatments that would prevent the return of the cancer.”

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In addition to Schaeffer and lead investigator Hurley, other Johns Hopkins researchers involved in this study were Luigi Marchionni, M.D.; Brian Simons, D.V.M.; Ashley Ross, M.D., Ph.D.; Sarah Peskoe, Sc.M.; Rebecca Miller, B.S.; Zhenhua Huang, Ph.D.; Bora Gurel, M.D.; Ben Park, M.D., Ph.D.; and Elizabeth Platz, Sc.D., M.P.H. Other investigators included Nicholas Erho, M.Sc.; Ismael Vergera, Ph.D.; Mercedeh Ghadessi, M.Sc.; and Elai Davicioni, Ph.D., at GenomeDx Biosciences Inc., in Vancouver, Canada; as well as Robert Jenkins, M.D., Ph.D., at the Mayo Clinic in Rochester, Minn.; and David Berman, M.D., at Queens University in Kingston, Canada.

For additional information, go to:
http://urology.jhu.edu/edwardschaeffer/index.php
http://www.pnas.org/papbyrecent.shtml

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