

Scientists discover genetic variant associated with prostate cancer in African Americans

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Today researchers report a newly identified genetic variation that is linked to higher incidence of prostate cancer in African American men. This study, which emphasizes the importance of characterizing genetic markers associated with prostate cancer in high-risk populations, is published online in *Genome Research*.

Prostate cancer is the second leading cause of cancer death in men and, according to the American Cancer Society, will claim the lives of more than 27,000 men in the United States this year. Among different populations, prostate cancer exhibits significant variation in incidence rates, with African American men exhibiting the highest rate worldwide.

Recent studies investigating genetic variations associated with susceptibility to prostate cancer have implicated a specific region of chromosome 8 as harboring potential markers for the disease. In the study published today, the research groups lead by Dr. Rick Kittles of the University of Chicago and Dr. John Carpten of the Translational Genomics Research Institute further analyzed the 8q24 region of chromosome 8 by comparing the genotypes of 490 African American men diagnosed with prostate cancer and 567 control subjects. "This study took advantage of differences in genetic ancestry among the African American men in order to replicate and further localize a risk locus for prostate cancer," says Kittles.

Using this information, the researchers characterized new genetic markers which were significantly associated with prostate cancer. "Since the prevalence of prostate cancer is almost two-fold higher among African Americans compared to European Americans, the use of ancestry informative markers for association with

novel prostate cancer risk locus that maps within a gene region on 8q24," Kittles says. "This region contains an interesting candidate gene involved in DNA repair."

The data gathered in this study confirmed previous investigations, indicating that common genetic variants are linked to elevated prostate cancer risk, and found even stronger effects for several of the markers on 8q24 in African Americans. These results have important implications for diagnosis and therapy. "The significance may be quite broad given the multiple genetic variants along 8q24 that impact risk," Kittles explains. "It is likely that within the 8q24 region there is inherited predisposition to genetic instability and this is leading to increased cancer risk. By studying this region, we may be able to develop molecular targets for improved screening, early detection, and possibly treatment."

Source: Cold Spring Harbor Laboratory

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