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Genetic link to prostate cancer risk in African Americans found

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Prostate cancer in African-American men is associated with specific changes in the IL-16 gene, according to researchers at the University of Illinois at Chicago College of Medicine.

The study, published online in the journal *Cancer Epidemiology, Biomarkers & Prevention*, establishes the association of IL-16 with prostate cancer in men of both African and European descent.

"This provides us with a new potential biomarker for prostate cancer," says principal investigator Rick Kittles, UIC associate professor of medicine in hematology/oncology.

Previously identified changes in the gene for IL-16, an immune system protein, were associated with prostate cancer in men of European descent. But the same changes in the gene's coded sequence—called "polymorphisms"—did not confer the same risk in African Americans.

Doubt was cast on IL-16's role in prostate cancer when researchers were unable to confirm that the IL-16 polymorphisms identified in whites were also important risk factors in African Americans, Kittles said.

Kittles and his colleagues used a technique called imputation—a type of statistical extrapolation—that allowed them to see new patterns of association and identify new places in the gene to look for polymorphisms. They found changes elsewhere in the IL-16 gene that were associated with prostate cancer and that were unique to African

Americans.

Polymorphisms result from DNA mutations and emerge in the ancestral history of different populations. People of African descent are much more genetically diverse than whites, Kittles said, making the search for polymorphisms associated with disease more difficult.

Although the effect of the particular changes to the gene appear to be different in men of African versus European descent, it is likely that several of the polymorphisms in the gene alter the function of the IL-16 protein.

"This confirms the importance of IL-16 in prostate cancer and leads us in a new direction," Kittles said. "Very little research has been done on IL-16, so not much is known about it."

"We now need to explore the functional role of IL-16 to understand the role it is playing in prostate cancer," he said.

Provided by University of Illinois at Chicago

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