

Researchers discover susceptibility gene for skin cancer

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(PhysOrg.com) -- Researchers, including those from The University of Texas at Austin, have identified a gene that plays a role in susceptibility to nonmelanoma skin cancer -- a discovery that could lead to novel strategies for prevention of that form of cancer.

Nonmelanoma skin cancer is the most common type of [malignancy](#) in humans with about one million new patients being diagnosed each year, said Dr. John DiGiovanni, professor in the Division of Pharmacology & Toxicology, College of Pharmacy and Department of Nutritional Sciences, College of Natural Sciences.

Nonmelanoma skin cancers, such as basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), are the most common forms of skin cancer. Though they are rarely life threatening, nonmelanoma skin cancers can be disfiguring when not diagnosed and treated in a timely manner. The incidence of nonmelanoma skin cancer (including both BCC and SCC) about equals that of all other human cancers combined.

"The morbidity and economic burden associated with these malignancies continues to escalate," said DiGiovanni. "It is hoped that the identification of this susceptibility gene will lead to new strategies for prevention of skin cancers and possibly other cancers in humans."

The research was published recently in the *Journal of the National Cancer Institute*.

Others contributing to the study included Drs. Joe Angel and Maria Person, researchers in the College of Pharmacy, Drs. Erika Abel and Penny Riggs, formerly of DiGiovanni's lab at the University of Texas M.D. Anderson Cancer Center, Science Park-Research Division in Smithville, as well as scientists from other institutions.

Much of DiGiovanni's research has focused on understanding the molecular and cellular mechanisms associated with cancer development. Cancer is a disease involving gene-environmental interactions so it's important to understand both environmental influences as well as genetic factors in searching for ways to prevent cancer.

DiGiovanni has worked on finding susceptibility [genes](#) for nonmelanoma [skin cancer](#) — that affects risk in both mice and humans — for the past 20 years. Before coming to Austin in 2010, he was a professor in the Department of Carcinogenesis (carcinogenesis is the process of cancer development) at the M.D. Anderson Cancer Center and was the director there from 1997-2009.

DiGiovanni also is studying the link between obesity and cancer. His research lab is in the university's new Dell Pediatric Research Institute adjacent to Dell Children's Hospital.

"Studies related to this gene indicate that it plays a role in the tumor promotion stage of skin carcinogenesis, which is the process whereby premalignant cells undergo expansion and acquire additional characteristics associated with malignancy," said DiGiovanni. The mechanism by which the newly discovered gene modifies skin tumor development, however, has not been determined.

Preliminary results from DiGiovanni's laboratory suggest this gene may play a role in other cancers, including several pediatric cancers such as leukemia and lymphoma as well as melanoma.

"Additional studies are needed," DiGiovanni said, adding that larger, population-based studies will be required to further validate these results.

Provided by University of Texas at Austin

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