

Moore's UC San Diego Cancer Center to Study Skin Sampling As Non-invasive Test for Detecting Prostate Cancer

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Researchers at the [Rebecca and John Moore's UC San Diego Cancer Center](#) will conduct research for development of a skin test to detect prostate cancer and predict its progress, thanks to a \$1.8 million grant from the University of California (UC) through its Industry-University Cooperative Research Program. These grants, called UC Discovery Grants, are designed to accelerate research with potential public benefits, and represent a three-way partnership between UC, the state of California and industry partners.

DermTech International, a San Diego-based biotechnology company developing skin sampling technologies for pre-clinical and clinical applications, is the industry partner on the grant to the Moore's UC San Diego Cancer Center. The Veterans Affairs San Diego Healthcare System will also play a role in this project.

The research will utilize DermTech's proprietary technology known as Epidermal Genetic Information Retrieval (EGIR™). It is a non-invasive technique for collecting a sample of surface skin cells with an adhesive film that allows the recovery and analysis of RNA for genetic profiling of the site in question. EGIR has been shown to detect specific changes in gene expression in the skin for dermatologic conditions like psoriasis, and can discriminate between allergic and irritant skin reactions at the molecular level.

Principal investigator on the grant is William Wachsman, MD, PhD, Associate Professor of Medicine at UC San Diego. He is also a member of the Moore's UC San Diego Cancer Center and a staff physician in hematology and oncology with the VA San Diego Healthcare System.

Recent research in Wachsman's laboratory revealed that prostate cancer cells influence other types of non-cancerous cells within the prostate. This led to the idea that these cancer cells might influence other tissues outside of the prostate.

"Many types of cancer cells, including those from prostate, circulate in the bloodstream. In fact, prostate cancer cells produce many factors that can affect the properties of other organs and

tissues, including the skin,” said Wachsman. “We are asking whether prostate cancer causes a change in the skin that is not noticeable by simple visual inspection, but that can be detected at a molecular level by using this highly sensitive technology.”


The study will compare the gene expression profiles of skin from men with and without the disease, to create a set of representative biomarkers that can be used as a tool to screen for prostate cancer.

It is further envisioned that EGIR will not only be a useful diagnostic tool, but will also aid in determining prognoses by allowing researchers to identify a pattern of biomarkers that predict the clinical behavior of the prostate cancer.

Besides ease of use, the EGIR technique has the added advantage of allowing the patient to be retested easily and painlessly, leading to a more accurate assessment of the patient’s condition and reducing the need for biopsies and the discomfort of repetitive needle sticks for blood tests. In addition, EGIR has the potential to overcome the limitations of current tests, such as PSA measurement and digital rectal examination of the prostate gland, which lack specificity and sensitivity.

“By enabling us to screen thousands of genes in each patient, EGIR is the only non-invasive method available that we can use to determine whether a biomarker ‘signature’ for prostate cancer exists in skin,” said Wachsman. “DermTech’s technology is a perfect fit as we look for better ways to detect cancer and manage its treatment. Our hope is that it will lead to development of a routine skin test for this disease.”

Study participants will be drawn from the patient populations at UC San Diego Medical Center and the VA San Diego Healthcare System. Co-investigators are VA urologist Tracy Downs, UC San Diego urologist Carol Salem, and UC San Diego statistician Charles Berry.

Founded in 1996 and headquartered in San Diego, California, DermTech International specializes in the development and validation of molecular biology techniques for the analysis of various skin disorders. The company’s proprietary Epidermal Genetic Information Retrieval (EGIR) technology is currently being studied in the context of tracking treatment efficacy for a variety of dermatologic conditions, including the effects of drugs on skin at the molecular level in advance of observable clinical results, and aiding in the diagnosis of disease. The company, in which approximately \$7 million of capital has been invested thus far, is actively seeking individual investors and partners for further development and commercialization of EGIR and its applications toward drug discovery and clinical research. Interested parties are encouraged to contact George Schwartz, CEO, at 619-417-3285 or visit the company’s website at <http://www.dermtech.com/> .

Founded in 1979, the Rebecca and John Moores UC San Diego Cancer Center is one of just 39 centers in the United States to hold a National Cancer Institute (NCI) designation as a Comprehensive Cancer Center. Part of the University of California, San Diego Medical Center, it

ranks among the top centers in the nation conducting basic and clinical cancer research, providing advanced patient care and serving the community through outreach and education programs.

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