

UC San Diego Researcher Awarded \$3.8 Million for New Path to Breast Cancer Therapy

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Seth Field, MD, PhD, associate professor in the Department of Medicine at UC San Diego, has been awarded a five-year, \$3.86 million “Era of Hope Scholar Award” from the Department of Defense Breast Cancer Research Program. The award supports individuals who have high potential for innovation in breast cancer research early in their careers, researchers considered the “best and brightest” in their field through “extraordinary creativity, vision and productivity and potential for leadership in the breast cancer research community.



Seth Field, MD, PhD

Field was one of two scientists selected in the global competition. His project “A New Path to Breast Cancer Therapy” will investigate the mechanism by which a lipid-binding protein called GOLPH3 contributes to cancer.

Recently, Field and colleagues discovered part of the mechanism involving GOLPH3 by which cells export proteins. Interestingly, the gene that encodes GOLPH3 is also a cancer gene that is commonly amplified in human cancers, including approximately one third of breast cancers. Although unprecedented, the identification of GOLPH3 as a cancer gene – together with his discovery of its role in a three-way interaction that is required for efficient extracellular transport – implicates the process of protein export in the development of cancer.

This award will fund experiments to determine the mechanism by which GOLPH3 causes cancer, the role of protein export in this process, and the suitability of the GOLPH3 pathway as a candidate target for new types of breast cancer therapy.

In 2008, Field was a winner of the NIH New Innovator award to study the function of the group of lipid signaling molecules called phosphoinositides and their target proteins such as GOLPH3. These are molecules which are known to play critical roles in regulating cell growth and death, metabolism, and communication processes within cells.

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