Designing New Approaches for Cancer Treatment

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CURRENT RESEARCH

Gaining new insight into GOLPH3 as a new target for cancer therapy

Of the roughly 24,000 genes encoded by the human genome, we have insight into the function of only a small minority of them. The rest remain the "dark matter" of biology - known to exist but poorly understood. Dr. Seth Field, a physician and scientist at the University of California, San Diego, believes that in order to understand human disease for developing cures, we must first better understand the dark matter. He has taken an innovative approach to identify new functional pathways that operate within our cells. One of the new pathways Dr. Field has discovered functions in the process by which cells export proteins, called secretion. He discovered that a protein called GOLPH3 is key to the process of secretion. This discovery is a surprise because GOLPH3 is also involved in driving a high proportion of cancers, and high levels of GOLPH3 in a cancer is a grim predictor that the cancer will be refractory to treatment. Thus, unexpectedly, the process of secretion plays an important role in cancer. This discovery promises to provide new insight into the processes that drive cancer and to reveal targets for new types of cancer therapy. Dr. Field's attention is now focused on learning how to disable the GOLPH3 pathway as an approach to curing cancer.

In studying the general ways cells function and communicate within the body, Dr. Seth Field, Associate Professor of Medicine in the Division of Endocrinology and Metabolism at the University of California, San Diego began by asking a number of fundamental questions, including: How do molecules in the cell carry information? What are the molecules in the cell that read that information? and What effects...

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AFFILIATION

University of California, San Diego

EDUCATION

- Postdoctoral Fellowship in Cell and Systems Biology, 2002,Harvard Medical School
- Fellowship in Endocrinology, 2001,Massachusetts General Hospital
- Residency in Internal Medicine, 1999,Hospital of the University of Pennsylvania
- Ph.D. in Genetics, 1997,Harvard Medical School
- M.D., 1997,Harvard Medical School
- and 1 more.

AWARDS

- Member, Editorial Board of the Journal of Biological Chemistry, 2014
- Elected to the American Society for Clinical Investigation, 2011
- Era of Hope Scholar Award in Breast Cancer Research, 2010
- NIH Director's New Innovator Award, 2008
- Faculty of 1000, Medicine, 2008
- and 2 more...

RESEARCH AREAS

Life Science, Metabolic / Diabetes, Oncology / Cancer, Oncology / Cancer

FUNDING REQUEST

Your contributions will enable Dr. Field to further explore GOLPH3 and its related pathways and expand on his development of novel cancer therapeutics. The discovery stage of basic science is a critical component of this research, and funding will allow for the discovery of detailed information about how these new pathways work. Your contributions will also allow this research to move forward into the development of clinical translational drugs that attack cancer in specific and unique ways.