Improving the Durability of Cancer Treatment

Daniel Harki
Assistant Professor, Medicinal Chemistry

CURRENT RESEARCH

Using chemistry to improve human health

Although scores of highly efficacious cancer drugs have been developed and are at the disposal of physicians, many treatments eventually fail when the patient develops resistance. Understanding the fundamental mechanisms behind why these drugs ultimately fail is necessary for the development of more durable, and potentially curative, therapies. Dr. Daniel Harki, Assistant Professor of Medicinal Chemistry at the University of Minnesota, uses chemistry to gain a greater understanding of the biology of how cancer cells evade drug therapies. Through the design, synthesis, and biophysical characterization of novel small molecules, Harki and coworkers create chemical probes to better characterize those processes in cancer cells that contribute to drug resistance, which contributes basic knowledge that benefits other scientists working in the field. Additionally, their chemical probes also serve as launch points for the development of new cancer drugs, and therefore, they have the potential to contribute to the development of new treatments to benefit cancer patients. Both areas are significantly impactful to human health and are helping to address why some cancers can evade the drugs that are designed to eliminate them.

While organic chemistry is at the core of his research, Dr. Harki also uses techniques of modern biology, genetics, and genomics to probe the biological activities of the compounds they synthesize. Awarded a Hyundai Hope on Wheels grant for his novel insights on childhood cancer research, as well as being named a V Foundation V Scholar for cancer research, Dr. Harki's team strives to translate their fundamental research to products that can benefit cancer patients. Dr. Harki and his team are...

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AFFILIATION

University of Minnesota

EDUCATION

- Postdoctoral Fellowship, 2005 - 2009 , California Institute of Technology
- Ph.D., 2005 , Pennsylvania State University
- B.A., 1999 , West Virginia University

AWARDS

- Professor of the Semester, University of Minnesota, College of Pharmacy, Class of 2017 - Duluth
- V Foundation V Scholar, The V Foundation for Cancer Research, 2012-2014
- California Tobacco-Related Disease Research Program, Postdoctoral Fellowship, 2007 - 2009
- American Heart Association, Predoctoral Fellowship, 2002 - 2005
- Phi Beta Kappa, West Virginia University, 1999

RESEARCH AREAS

Life Science, Oncology / Cancer, Stem Cell, Oncology / Cancer

FUNDING REQUEST

Your contributions will support the continued research of Dr. Daniel Harki, of the University of Minnesota, as he and his team take a chemistry approach to tackling important problems in cancer biology. Donations will fund the necessary $400-500K/year required to fund researcher salaries, equipment purchases and upkeep, and research supplies. Additional funding would permit he and his team to maintain innovativeness, test novel hypotheses, and accelerate the translation of their discoveries. Join in contributing to the discovery of basic knowledge while also having an impact on human health!