A Prescription for the Undruggable

Brian McNaughton
Assistant Professor, Department of Chemistry, and Biochemistry & Molecular Biology

CURRENT RESEARCH

Developing synthetic protein therapeutics

The majority of receptors on the inside and outside of diseased cells are largely "undruggable" by current therapies, which overwhelming are small molecule drugs. However, by manipulating the structure and function of proteins, researchers can develop synthetic proteins as modulators of disease-relevant cell function and fate. Dr. Brian McNaughton, of Colorado State University, is focused on utilizing proteins as basic research tools and therapeutic leads. His interests have led him to develop synthetic proteins capable of modulating disease-relevant receptors and cellular processes, with an emphasis on macromolecular targets that present a challenge to traditional small molecule drug discovery. In doing so, Dr. McNaughton's research team has expanded the functional diversity of proteins as basic research tools and therapeutic leads with the potential to improve human health.

Dr. McNaughton's research has established a fundamentally new paradigm in drug discovery, which rests on his team's ability to engineer or evolve synthetic proteins with therapeutic application, as well as develop nanomaterials for targeted delivery of protein drugs to diseased cells. Research in the McNaughton lab spans basic science and translational research - the discovery of new drug leads and initial assessments of these reagents in living human cells and in living systems. His research may lead to a dramatic increase in the number of protein-based drugs for numerous cancers and infections diseases, including HIV and Ebola. In fact, his previous research has received over $2.1 million in grant funding for prostate cancer, leukemia, and HIV-related research. In short, the innovative paradigm shift in drug development posed by Dr....

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AFFILIATION

Colorado State University

EDUCATION

- Postdoctoral fellow in Department of Chemistry & Chemical Biology 2009, Harvard University
- Ph.D. in Department of Chemistry 2007, University of Rochester
- B.S. in 2002, Indiana University of Pennsylvania

AWARDS

- Leukemia Research Foundation Floyd A. Schlossberg Award, 2012-2013
- DoD-CDMRP Prostate Cancer Program New Investigator Award, 2010-2013
- Howard Hughes Medical Institute Post-Doctoral Fellow, 2007-2009
- Robert and Marian Flaherty DeRight Fellow, 2002

RESEARCH AREAS

Life Science, Oncology / Cancer, Oncology / Cancer, Drug Development

FUNDING REQUEST

Your contributions will support the continued research of Dr. Brian McNaughton, of Colorado State University, as he develops innovative therapeutic tools by modifying naturally existing proteins. Your donations will support the necessary $250K per year required for personnel and research. In choosing to support his research, you will be a part of creating new therapeutic treatments for prostate cancer, leukemia, HIV, and more!

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