



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
R1001

Project Title:
Recruitment of First-Time, Tenure-Track Faculty Members

Award Mechanism:
Recruitment of First-Time, Tenure-Track Faculty Members

Principal Investigator:
Ivanov, Dimitri

Entity:
The University of Texas Health Science Center at San Antonio

Lay Summary:

Dr. Dmitri Ivanov is a structural biochemist whose work on physical interactions at protein interfaces has already had a significant influence on our thinking about therapeutic approaches to two of the deadliest problems facing the mankind -- AIDs and cancer. He was recruited from Harvard Medical School in February, 2010 to the Dept. of Biochemistry at The University of Texas Health Science Center at San Antonio.

Dr. Ivanov's research program at the University of Texas Health Science Center at San Antonio will use his expertise in protein-protein and protein-small molecule interactions to address one of the major challenges and opportunities of molecular pharmacology: inhibition of protein-protein interactions for therapeutic purposes. Particular emphasis will be on the identification, characterization, and targeting of critical macromolecular interactions involved in DNA damage sensing and repair. Inhibitors of DNA repair may expand the therapeutic window of very widely used anti-cancer drugs like cisplatin that work by causing DNA damage in rapidly dividing cells of tumors. The utility of these drugs is limited both by their toxicity to normal cells and by acquired resistance as cancer cells develop more effective DNA repair machinery. Targeting the assembly of the repair machinery at the outset should dramatically enhance the efficacy of these drugs. The structural and biophysical characterization of the key protein interactions in DNA repair in Dr. Ivanov's lab should identify how they could potentially be disrupted by pharmacological means.