

Searching for the Next Generation of “Targeted” Drugs to Treat Everything from Diabetes to Cancer



Igor Roninson, Ph.D.

Professor and Endowed Chair in Translational Cancer Therapeutics

Dr. Roninson is an eminent cancer researcher, author of more than 160 articles, inventor of 41 issued U.S. patents, and recipient of several major awards for his research in the fields of cancer and aging.

Roninson is best known for his discovery of the key gene responsible for the resistance of tumor cells to many different drugs.

Many new drugs have been derived by identifying specific molecules that play key roles in the disease and tailoring drugs to act at these selected targets. This “targeted therapeutics” approach is a burgeoning field that is rapidly generating new disease targets and new classes of drugs that are revolutionizing medicine. The SC College of Pharmacy is well-positioned to discover new drug targets and new classes of drugs aimed at these specific diseases.

Dr. Igor B. Roninson joined SCCP in 2011 as Endowed Chair in Translational Cancer Therapeutics. Dr. Roninson developed the first genomics-based methodologies for identifying new molecular targets for drugs against cancer and other diseases, a key aspect of targeted therapeutics. He also has discovered that anticancer drugs and radiation stop tumor cell division by activating the biological program of senescence (aging). Roninson’s current research focuses on a protein, called CDK8, which is central to processes that cause and aggravate cancers. Roninson’s team discovered that the inhibition of CDK8 makes cancers more responsive to various anticancer drugs, decreases the metastatic spread of different tumors and

inhibits the growth of the most aggressive prostate cancers.

Roninson founded a drug discovery and development company, Senex Biotechnology, Inc., which has discovered a potent and selective inhibitor of CDK8, a drug candidate which will likely be effective against many different types of cancer.

“Conventional anticancer drugs, while essential for current cancer therapy, have side effects that can damage healthy cells and cause them to promote the growth of surviving cancer cells,” said Roninson. “We needed to find a way to interrupt that process and the planned clinical studies will tell us if we have succeeded.”

In July 2014, Roninson and his colleagues were awarded an \$11.3 million grant from the National Institutes of Health to establish the *Center for Targeted Therapeutics (CTT)* at the University of South Carolina. The five-year grant, one of the largest competitive awards in the university’s history, supports the recruitment, mentoring and research of junior faculty working on targeted therapeutics of various diseases.

“This grant is recognition that the most promising pharmaceuticals—ones that provide

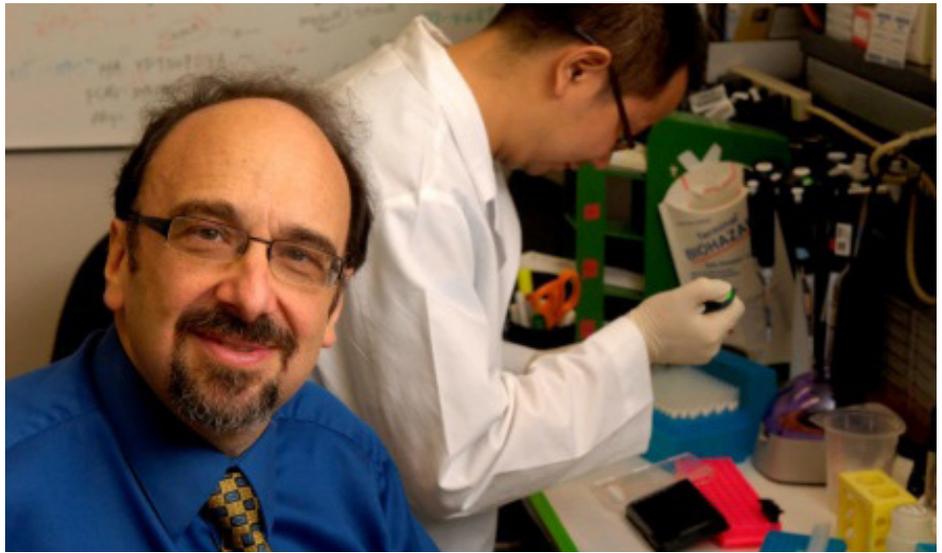
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Education

Ph.D., Biochemistry, 1982, Massachusetts Institute of Technology
M.S., Virology, 1977, Moscow State University, Moscow, Russia
Postdoctoral Fellowship, Molecular Biology, 1984,
Massachusetts Institute of Technology

more effective approaches to hard-to-treat diseases—are now being discovered in academic labs through multidisciplinary collaborations, before they are picked up by big pharma,” Roninson said.

The grant also supports the infrastructure for interdisciplinary research in targeted therapeutics, spanning both campuses of SCCP and other colleges at USC.



Learn how you can help support the efforts of Dr. Roninson.
Contact our Director of Development at (803) 777-5426.