

Watabe receives \$2 million in cancer grants

Kounosuke Watabe, Ph.D., professor of medical microbiology, immunology and cell biology has been awarded two five-year federal grants from the National Cancer Institute, a division of the National Institutes of Health. These grants will study genes that suppress the spread of cancer in the body. Dr. Watabe, a member of the Simmons-



Cooper Cancer Institute at SIU, is the principal investigator for the projects.

One grant will study the gene *KAI1*, which suppresses the metastasis of tumors in the body. The total budget for the grant is \$1,013,008. The second grant will study the gene *Drg 1*, which suppresses metastasis of prostate and breast cancers. The total budget for the grant is \$1,036,128.

Both the *KAI1* and *Drg 1* genes prevent cancer tumors from spreading to other organs in the body. When these genes have broken down or lost their function in cancer patients, they no longer provide protection, allowing the cancer to spread. Both studies will explore how and why the genes become unable to suppress cancer metastases. The research also will look at ways to make a drug that mimics the genes and perhaps prevent the spread of cancer.

Co-investigators for the grants are **Yin-Yuan Mo, Ph.D.**, associate professor of medical microbiology, immunology and cell biology, and **Vickram Ramkumar, Ph.D.**, associate professor of pharmacology. Both are also members of the SimmonsCooper Cancer Institute at SIU. Researchers at the Red Cross Hospital in Japan are collaborating on the project.

This is the 14th national grant awarded for Dr. Watabe's research. He previously has been funded for research focused on prostate and breast cancers. His research enterprise, which totals more than \$4 million, has been funded for more than 20 years by the National Institutes of Health, National Science Foundation, United States Army, American Cancer Society and American Lung Association.

Dr. Watabe joined SIU's faculty in 1985. He completed a postdoctoral fellowship at the University of Arizona in Tucson (1985). He earned his doctorate, master's and bachelor's degrees at Kyoto University in Japan (1981, 1978, 1976).

Excellence in Academic Medicine Awards

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- Nancy Johnston, DVM
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Grant awarded to study liver cancer

Deliang Cao, Ph.D., assistant professor of medical microbiology, immunology and cell biology and member of the SimmonsCooper Cancer Institute at SIU, has received a two-year federal grant from the National Cancer Institute, a division of the National Institutes of Health. The grant is for the study of how a normal protein called aldose reductase-like-1 (ARL-1) interferes with the successful treatment of liver cancer.



The project's budget is \$317,900.

Hepatocellular carcinoma is a rapidly increasing type of human cancer and is ranked as the eighth leading cause of cancer death in the United States. It is widely resistant to drugs used in chemotherapy. The research will determine how ARL-1 allows cancer to resist chemotherapy. The study also will evaluate the protein as a possible target for anti-cancer drugs. This research may lead to the development of an effective treatment for hepatocellular carcinoma and thus reduce patient deaths due to the disease.

New imaging equipment to advance cancer research

A shared instrumentation grant from the National Institutes of Health (NIH) has made possible the purchase of a bioluminescence imaging system (BLI) that will allow researchers to study the development, growth and spread of cancers, infections and other diseases. The BLI consists of a highly sensitive camera located in a light-tight chamber and connected to a computer system. The camera scans live, anesthetized rodents to detect cells or tissues that have been genetically tagged to emit light under various pathological conditions such as tumor formation, bacterial growth or tissue injury. The total grant award is \$203,405.

"This equipment will fuel greater opportunities for research here at SIU, especially with the ongoing expansion of the research efforts of the SimmonsCooper Cancer Institute (SCCI)," says **Linda Toth, Ph.D.**, associate dean for research and faculty affairs and professor of pharmacology. "The BLI will enable our scientists to use far fewer animals to successfully study complex diseases as compared to more conventional methods."

Several SIU faculty members will use the equipment for their NIH-sponsored research. Co-investigators on the grant who are members of the SCCI research team are **Kounosuke Watabe, Ph.D.**, and **Subhas Chakrabarty, Ph.D.**, both professors of medical microbiology, immunology and cell biology; **Yin-Yuan Mo, Ph.D.**, associate professor of medical microbiology and cell biology; and **Deliang Cao, Ph.D.**, **Daotai Nie, Ph.D.**, and **Sophia Ran, Ph.D.**, assistant professors of medical microbiology, immunology and cell biology.

Other co-investigators for the project are Dr. Toth, **Andrzej Bartke, Ph.D.**, professor of medicine and physiology; and **Leonard P. Rybak, Ph.D.**, professor of surgery and pharmacology.