School of Pharmacy researcher awarded $3.53 million in NIH grants

Since joining the University of Missouri-Kansas City in 2007, School of Pharmacy Professor Kun Cheng has worked on developing targeted delivery systems for drugs that treat cancer and liver disease.

Recently, he won two National Institutes of Health grant awards totaling more than $3.5 million to fight prostate cancer and liver fibrosis and cirrhosis.

"Dr. Cheng is on the forefront in the fight against cancer and disease, and it’s rewarding that his discoveries are being recognized by the NIH at a time when funding is more competitive than ever," said Russell Melchert, dean of the UMKC School of Pharmacy.

The first grant from the National Cancer Institute for $1.772 million is for Cheng to develop successful immunotherapies against advanced prostate cancer. The other $1.758 million grant, from the National Institute on Alcohol Abuse and Alcoholism, is to reverse alcoholic liver fibrosis using nanotechnology to deliver a gene-silencing large molecule called siRNA that was discovered in Cheng's laboratory. There's no standard treatment for liver fibrosis, which left untreated, leads to cirrhosis, a condition that’s irreversible. Both new grants are for five years.
Last year, Cheng won another NIH grant for $1.2 million. In that project for the National Institute of General Medical Sciences, Cheng's team aims to improve the solubility and specificity of a chemotherapy drug using a peptide-based platform. If successful, the same platform can be used for other chemotherapy agents that have poor solubility and specificity.

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"Immunotherapy using monoclonal antibody has now evolved into the most promising therapy for various cancers," Cheng said. "However, its large size may limit its activity inside tumor tissues. We recently discovered a peptide-based checkpoint inhibitor with low molecular weight. The “small” checkpoint inhibitor demonstrates very promising anti-tumor activity, and we are in the process to file a patent application for this discovery."

Cheng is the 2018 winner of the Trustees Faculty Fellows Award, recognizing outstanding faculty who distinguish themselves through scholarship and creativity. He was recognized with the award this month.

Article by Stacy Downs, Strategic Marketing and Communications

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