



JOHNS HOPKINS
M E D I C I N E

KIMMEL CANCER CENTER

***“From Bench to Bedside”
Research News from Dr. Lei Zheng***



For over 100 years the world’s leading medical scientists have studied the human body’s immune system and its potential to fight cancer. Now, scientists are at the threshold of tremendous success in harnessing this power. Cancer immunotherapy including vaccines may prove to be the most significant medical advancement of our time.

As you read this, physician scientists at Johns Hopkins are developing cancer vaccines and other immunotherapies that have the potential to be more targeted, more effective and less toxic than current cancer treatments. These immunotherapies assist the body’s immune system to recognize and fight cancer cells and control tumor growth. They are also less painful and invasive than other traditional treatments, and can be greatly beneficial to the patient’s quality of life.

As the physician scientists at Johns Hopkins apply our discoveries, we will be improving the hope for the future of cancer patients everywhere. The benefits of decades of research have truly begun to pay off in the form of new ways to overcome this disease.

We are happy to provide this update on the research that Dr. Lei Zheng and his research team have been busily conducting.

At the 46th Annual Meeting of the Pancreas Club held on May 18-19, 2012 in San Diego, Dr. Zheng was invited to present two important addresses on his research. The Pancreas Club, established in 1966, promotes the interchange of ideas between pancreatologists from around the world. The Club attracts internationally renowned pancreatic surgeons, oncologists, gastroenterologists, and researchers to present their work at its annual meeting.

In Dr. Zheng’s first speech entitled “Granulocyte Macrophage Colony Stimulating Factor (GM-CSF) Pancreas Tumor Vaccine in Combination with Blockade of PD-1 in a Pre-clinical Model of Pancreatic Cancer”, he reported his recent research progress that may lead to a breakthrough in immune-based cancer therapy. Dr. Kevin Soares, a surgery resident and a research fellow in Dr. Zheng’s research team, has demonstrated in an animal model of pancreatic cancer that combining the pancreatic cancer vaccine with a monoclo-

nal antibody treatment that blocks the PD-1 pathway can significantly enhance the effectiveness of the vaccine that he is currently treating his patients through clinical trials. Recently at the Annual Meeting of American Society of Clinical Oncology, Dr. Zheng's colleagues reported their breakthrough in the research of currently the most promising immunotherapy agents, showing the treatment effect of the antibodies that block the PD-1 or its binding partner, PD-L1, in melanoma, lung cancer, and renal cell cancer, but unfortunately not in gastrointestinal cancers such as colon cancer and pancreatic cancer. Dr. Zheng hopes that his research can be translated into an innovative and more effective immunotherapy for pancreatic cancer and colo-rectal cancer by combining the PD-1 or PD-L1 blockade antibodies with the vaccine.

In his second speech, Dr. Zheng reported his clinical research on nonresectable localized pancreatic cancer. His research suggests that the optimal treatment for this stage of pancreatic cancer is to start with chemotherapy, differing from the traditional view which has focused on radiation therapy.

In addition to his research on the pancreatic cancer vaccine therapy, Dr. Zheng's laboratory is also developing a therapeutic monoclonal antibody targeting annexin A2, an important pancreatic cancer antigen discovered through analyzing the serum from patients who had received the pancreatic cancer vaccine in the past. This research has been funded through a generous grant to Dr. Zheng from the Lefkofsky Family Foundation, Lustgarten Foundation and National Pancreas Foundation.

Dr. Zheng is also invited to speak on his above research progress at the 2012 World Congress of the International Hepato-Pancreato-Biliary Association scheduled for July 1 – 5 in Paris.

The convergence of brilliant scientific minds and dedicated donors has brought us to this point in time where we can begin to alter the course of cancer in ways we could only imagine just a few years ago.

Thank you for your part in making history.

About Dr. Lei Zheng...

Lei Zheng, M.D., Ph.D. is Assistant Professor of Oncology and Surgery at the Johns Hopkins University School of Medicine, and plays a leading role on the team of physician-scientists at the Sidney Kimmel Comprehensive Cancer Center. He is a lead researcher in the group of Kimmel Cancer Center's physician scientists who have developed the pancreatic cancer GVAX vaccine and is also studying its use in colo-rectal cancer. Dr. Zheng's long-term goal is to develop additional novel therapeutics for pancreatic and colo-rectal cancers by targeting the tumor's microenvironment and conducting innovative "first in human" clinical trials.