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NEWS RELEASE

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Jefferson Awarded Multi-Million Dollar NIH Grant for External Imaging of Cancer Gene Activity

PHILADELPHIA - Thomas Jefferson University has been awarded a four-year, $2.5 million grant from the National Institutes of Health (NIH) for a study of cancer gene activation in lung cancer. The research team proposes to use imaging techniques to highlight a gene involved in solid tumors, thus helping to direct cancer therapy.

“We propose to detect a particular activated cancer gene known as KRAS2 in lung tumors from outside the body by nuclear medicine genetic imaging," said principal investigator Eric Wickstrom, Ph.D., Professor of Biochemistry & Molecular Biology at Jefferson Medical College of Thomas Jefferson University.

The clinical value of this study was underlined by co-investigator Edith P. Mitchell, M.D., Clinical Professor of Medicine & Medical Oncology, who explained that “if the KRAS2 cancer gene has been activated by mutation, therapies directed against epidermal growth factor receptor (EGFR) will fail.”

Co-investigator Mathew L. Thakur, Ph.D., Professor of Radiology & Radiation Oncology is an internationally acclaimed expert in nuclear medicine. He noted that “these external imaging experiments will test for the possibility of detecting KRAS2 cancer gene signals from lung lesions that are resistant to EGFR antagonists.” All three Jefferson professors are members of the Kimmel Cancer Center.

According to co-investigator Koon Yan Pak, Ph.D., President and CEO of Molecular Targeting Technologies, Inc., who has translated a series of nuclear medicine diagnostic agents into the clinic, “We are excited by this collaboration with Jefferson; our priority for this award is to translate basic science discoveries into regular clinical use against lung cancer.”

This grant for “PET imaging of KRAS2 activation to guide EGFR targeting in cancer therapy” was awarded by the National Cancer Institute of NIH as part of its academic-industrial program for speeding bench top discoveries to the bedside.

Currently, Dr. Wickstrom, Dr. Thakur, and Dr. Pak are developing nuclear medicine agents to image the activity of HER2 cancer gene in suspicious breast lesions, supported by another NCI grant. Dr. Wickstrom and Dr. Thakur have previously shown that the breast cancer markers CCND1 and VPAC1 can be seen from outside the body with their unique nuclear medicine genetic imaging agents.

"In the future, imaging multiple cancer genes might guide early treatment according to which cancer genes are active in solid tumors, and might even identify developing cancers before they form a tumor mass," said Dr. Wickstrom.

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