

For Immediate Release

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Breast Cancer Researcher at Pioneer Valley Life Sciences Institute Receives Grant From the National Institutes of Health

Pioneer Valley Life Sciences Institute (PVLSI) scientist Dr. Rong Shao has received a grant for his breast cancer research from the National Cancer Institute (NCI) of the National Institutes of Health (NIH). The grant, entitled "Role of a novel angiogenic factor, YKL-40, in breast cancer progression," provides \$1.1 million over 5 years.

Last year approximately 40,000 women died of breast cancer and another 178,000 were diagnosed with invasive breast cancer. Treatment of breast cancer at early stages significantly increases 5-year survival rates, yet early diagnosis, particularly for those patients whose cancer has spread or metastasized, remains problematic. Dr. Shao explains, "Our goal is to understand better at the molecular level how metastasis occurs in breast cancer patients. We have identified that a protein called YKL-40 (also named human cartilage glycoprotein-39) is elevated in the blood serum of patients with breast, brain, colorectal, and ovarian cancer, and leukemia. This grant allows us to test the relationship between high YKL-40 serum levels and a poor prognosis and short survival, meaning that YKL-40 levels might offer a much-needed tool to measure the prognosis of multiple cancers."

YKL-40 appears to facilitate a tumor's ability to grow, invade, and metastasize. In this project, Dr. Shao's group seeks to define the role of YKL-40 in tumor progression. They will analyze cancer samples from the extensive human tissue bank at the Baystate Medical Center, will conduct molecular studies to understand how YKL-40 functions, and will study the effects of YKL-40 on cultured cells and tumors to understand its role in tumor growth, invasion, and metastasis. For more information about Dr. Shao, visit http://pvlsi.org/lab_shao.html

"The overproduction of YKL-40 in later-stage cancers may point to YKL-40 as a powerful clinical tool for cancer diagnosis and prognosis. As well, an understanding of its function may inform new strategies for cancers that have thus far proved difficult to treat," explains Dr. Larry Schwartz, science director of PVLSI. Dr. Shao's research, which combines molecular and cell culture studies with human tissue analysis, typifies the research model of PVLSI, which unites the quality bench science of the University of Massachusetts Amherst with the clinical expertise of the Baystate Medical Center.

Dr. Schwartz observes that, "we are privileged to have a researcher of Dr. Shao's caliber working with us as part of both the Breast Cancer Working Group and the Center of Excellence in Apoptosis Research. This grant is another example of how the Breast Cancer Working Group's collaborative approach and unique resources are helping to accelerate promising work." The Center of Excellence in Apoptosis Research is part of the Pioneer Valley Life Sciences Institute. CEAR's membership includes 45 researchers from the Institute, Baystate Medical Center, and UMass Amherst. Apoptosis, or programmed cell death, is a genetic program resident in all of our cells that allows the body to effectively dispose of defective or surplus cells. Aberrations in apoptosis have been estimated to play a role in approximately 70% of human disease including cancer, autoimmune disorders, and cardiovascular disease. The John Adams Innovation Institute of the Massachusetts Technology Collaborative supports CEAR's innovative programs.

About the Pioneer Valley Life Sciences Institute (PVLSI)

PVLSI was created in 2002 as a joint venture of Baystate Medical Center and the University of Massachusetts Amherst with the dual missions of biomedical research and economic development. Drawing on each of the founders as well as its own researchers, the Institute brings together physicians, scientists, and engineers to create interdisciplinary and multidisciplinary teams focused on the molecular mechanisms of disease and the development of new diagnostic and therapeutic tools. For more information, go to www.pvlsi.org.

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