Dissecting the Tumor Microenvironment with a Novel Glioblastomas Mouse Model

Abstract: Gliomas are major primary brain tumors, of which glioblastomas (GBM) are the most common and aggressive forms. The poor outcome of traditional treatment for these tumors demands targeted therapies based on identified mechanisms that drive tumor development. Molecular pathology has classified GBM into subtypes, among which the mesenchymal group is the most malignant. It is still not clear how GBM mesenchymal differentiation is achieved. Recent anatomically based transcriptome studies found that tumor cells associated with the necrotic region have higher expression of the mesenchymal signature genes, suggesting that the necrotic tumor microenvironment may contribute to mesenchymal differentiation and could be exploited as a therapeutic target. We have developed a novel pathologically relevant GBM mouse model showing mesenchymal differentiation and extensive necrosis. In this seminar, I am going to introduce how we are utilizing the model to understand the impact of tumor microenvironment on GBM progression.

Biography: Wei Li received his undergraduate degree in plant molecular and developmental biology in 1998 and his master's degree in biochemistry and molecular biology in 2001 from Peking University. He came to the U.S. and received a Ph.D. degree in molecular genetics from Albert Einstein College of Medicine in 2007. After postdoctoral training at Memorial Sloan Kettering Cancer Center, with Dr. Filippo Giancotti, Dr. Li joined Penn State College of Medicine faculty as an Assistant Professor of Pediatrics in 2015. Dr. Li’s research interest is studying intercellular interactions during tissue homeostasis and determining how de-regulated interactions among cells promote cell transformation and tumor progression. The research in his laboratory integrates molecular, cellular and biochemical approaches in combination with mouse tumorigenesis models. The goal of Dr. Li’s research is to find molecular targets and biomarkers for cancer therapy.