Stony Brook University

Biomedical Informatics Grand Rounds

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Keratin 17 identifies and drives the most lethal molecular subtype of pancreatic cancer

Wednesday, Mar 6, 2019 3pm—4pm

BMI Conference Room HSC-L3 Room 045

Abstract:

Keratin 17 (K17) is a negative prognostic biomarker expressed in the most aggressive molecular subtype of pancreatic ductal adenocarcinoma (PDAC). We further determined that the immunohistochemical (IHC) localization of K17 is as accurate as molecular subtyping to identify patients with the most biologically aggressive form of PDAC. Although elevated levels of K17 mRNA are prognostic, K17 IHC outperformed mRNA sequencing to predict shorter survival. Expanding on these studies, we have collaborated with scientists at Roche Labs to develop a multiplexed IHC platform that enables us to examine the spatial histologic relationships between K17 expression in tumor cells and specific cell types that comprise the inflammatory microenvironment. Furthermore, members of our team, working together with investigators in the Department of Biomedical Informatics, are developing the tools to enable automated image analysis of these slides, to correlate K17-positive tumor-immune spatial relationships with patient outcomes and treatment response.

Bio:

Dr. Shroyer is a staff surgical pathologist and cytopathologist and serves as President of the University Pathology Faculty Practice and Chair of the Department of Pathology at the Renaissance School of Medicine. He also leads a cancer research lab, funded by a major award from the Pancreatic Cancer Action Network (PanCAN) and is the Director of the Cancer Program of Stony Brook Universities' Institute for Clinical Biology and Drug Discovery. Dr. Shroyer's laboratory has undergone a dramatic transformation over the past six years, from a focus on diagnostic biomarkers to research that is uncovering molecular mechanisms which drive fundamental properties of the most aggressive forms of human cancer, including pancreatic ductal adenocarcinoma (PDAC). His lab has established functional domains that mediate Keratin 17's ability to serve as a nuclear shuttle, providing a rational basis for the development of novel pharmacologic approaches in PDAC.

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