Proteomics-2013
3rd International Conference on
Proteomics & Bioinformatics
July 15-17, 2013 Courtyard by Marriott Philadelphia Downtown, USA

Tumor interstitial fluid - A treasure trove of cancer biomarkers

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Abstract

Tumor interstitial fluid (TIF) is a proximal fluid that, in addition to the set of blood soluble phase-borne proteins, holds a subset of aberrantly externalized components, mainly proteins, released by tumor cells and tumor microenvironment through various mechanisms, which include classical secretion, non-classical secretion, secretion via exosomes and membrane protein shedding. Consequently, the interstitial aqueous phase of solid tumors is a highly promising resource for discovery of molecules associated with pathological changes in tissues. Firstly, it allows one to delve deeper into the regulatory mechanisms and functions of secretion-related processes in tumor development. Secondly, the anomalous secretion of molecules that is innate to tumors and the tumor microenvironment, being associated with cancer progression, offers a valuable source for biomarker discovery and possible targets for therapeutic intervention. Here we provide an overview of the features of tumor-associated interstitial fluids, based on recent and updated information obtained mainly from our studies of breast cancer. Data from the study of interstitial fluids recovered from several other types of cancer are also discussed. This article is a part of a Special Issue entitled: The Updated Secretome.

Biography

Gromov P is an Assistant professor at Danish Cancer Society Research Center. He completed his PhD in 2005. He has published more than 25 papers in reputed journals and serving as an editorial board member of repute.