

Dr. Liang Wu is the principal scientist of BGI Research. Her interests focus on developing high-throughput single-cell omics technologies, as well as underlying the key states or features of malignant cells and microenvironmental components during tumor growth, relapse and metastasis, and drug resistance, using cutting-edge single-cell omics and spatial omics technologies. She has dissected the unique tumor ecosystem of early-relapse hepatocellular carcinoma using her own developed single-cell full-length transcriptome platform (Cell 2021), which has been selected as an ESI highly cited article. Additionally, she has defined the 500 μ m "invasive zone" of liver cancer using high-resolution spatial transcriptome Stereo-seq and indicated the prognosis preditor and potential drug target roles of SAA1high damaged hepatocytes (cover paper, Cell Research 2023). She has published more than 30 single-cell sequencing or cancer-related papers in scientific journals such as Cell, Cell Research, Nature Communications et. al.

Title: Dissecting tumor heterogeneity and microenvironment using single-cell and spatial technologies

Abstract:

Single-cell technology is a powerful tool to uncover the tumor heterogeneity and the cell state of microenvironmental components in the last decades. Recently, rapidly developing single-cell even subcellular resolution spatial technologies are beneficial to underlying tissue architecture and cell-cell interaction within tumor niches. The presentation will briefly introduce the development of singlecell and spatial technologies and discuss how to use spatial transcriptome for systematically investigating the heterogeneity of particular tumor regions, revealing the evolutional regularity of tumor cells and the mechanism of microenvironment reshaping, during tumor progression at a high-resolution, and the potential applications in the clinical scenario.