

Resource Summary Report

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Single Nuclei RNA Sequencing of Breast Adipose Tissue (10x Nuclei-Seq)

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Proper Citation

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Protocol Information

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Group: Human Cell Atlas Method Development Community

Summary: Breast cancer originates in the mammary gland epithelium, however growing evidence demonstrates that the diverse array of stromal tissues influence the behavior of breast epithelium and has key roles in the pathogenesis of breast cancer. Despite increased recognition and research, the heterogeneity of the breast stroma (endothelium, fibroblasts, and adipocytes) poses challenges in elucidating which stromal populations are responsible for the complex interactions of the breast microenvironment. To this end, we have employed single cell RNA sequencing (scRNAseq) of the stromal populations within the breast. However adipose tissue, due to its delicate and lipid filled nature is not amenable to these methods of interrogation. To overcome this obstacle, we have developed a method for isolation of adipose nuclei for 10x sequencing. Together, we will use these approaches to investigate the heterogeneity of stroma and adipocytes, and determine the interactions of the breast microenvironment at single-cell resolution.??

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