

**Phenotypic Variation Between Stromal Cells Differentially Impacts Engineered Cardiac Tissue Function.**

**Journal:** Tissue Eng Part A

**Publication Year:** 2019

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**PubMed link:** 30968748

**Funding Grants:** Engineering microscale tissue constructs from human pluripotent stem cells

**Public Summary:**

IMPACT STATEMENT: Understanding the relationship between parenchymal and supporting cell populations is paramount to recapitulate the multicellular complexity of native tissues. Incorporation of stromal cells is widely recognized to be necessary for the stable formation of stem cell-derived cardiac tissues; yet, the types of stromal cells used have varied widely. This study systematically characterized several stromal populations and found that stromal phenotype and morphology was highly variable depending on cell source and exerted differential impacts on cardiac tissue function and induced pluripotent stem cell-cardiomyocyte phenotype. Therefore, the choice of supporting stromal population can differentially impact the phenotypic or functional performance of engineered cardiac tissues.

**Scientific Abstract:**

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