Developing an automated functional cardiotoxicity drug screening platform

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INTRODUCTION
Cardiotoxicity is a major challenge in drug development. Current cardiotoxicity testing relies heavily on ion channel measurements using patch clamp analysis on heart cells (cardiomyocytes). An automated functional cardiotoxicity drug testing method that extends beyond ion channel analysis has not yet been developed, but is required, as many cardiotoxic events do not correlate with ion channel behavior.

The key function in evaluating cardiac toxicity is cardiac mini-tissue contraction. The project aim is to develop an automated analysis platform with contracting mini-tissues in a multi-well format connected to a read-out system. A micro-molded platform manufactured using state-of-the-art 3D microprinting has shown proof of concept with model cells (mouse fibroblasts and myoblasts) cultured for up to 4 weeks.

FUNCTIONALITY
PROCESS
BACKROUND FOR DEVELOPMENT

REFERENCES