



Simplified Engineered Tissue Fabrication and Handling with MC-8™

Application:

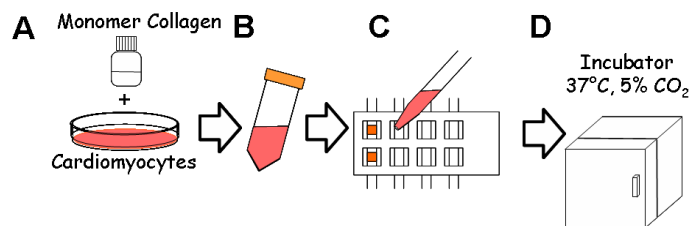
Fabricate up to eight miniaturized three-dimensional (3D) tissue constructs in each Mini-Construct Chamber™ (MC-8™). Assess cellular physiology and tissue construct mechanical properties in just under three minutes using the Palpator™.

Introduction:

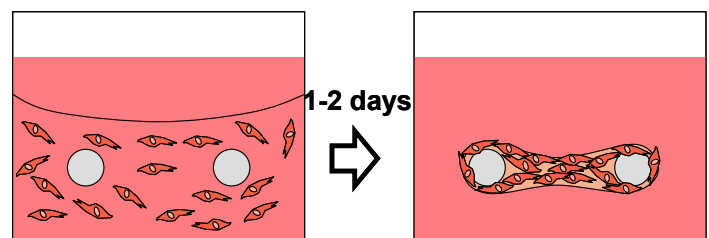
Cellular interactions with the extracellular matrix critically regulate cell morphology, growth, and differentiation. Studies show that cells grown on two-dimensional (2D) substrates lack these interactions and do not exhibit the morphologic or physiologic characteristics of cells grown *in vivo*. A better model for investigating cellular mechanics and physiology are cells grown in a three-dimensional (3D) matrix.

The MC-8™ provides a simple solution for fabricating and studying 3D tissue constructs. Each chamber of the MC-8™ is equipped with two horizontal supports around which the tissue forms, while the open top and transparent bottom of the MC-8™ enable easy microscopic and spectroscopic analyses. Our tissue-based assay instrument, the Palpator™, can automatically quantify the contractile force and stiffness of tissue constructs grown in MC-8s™. Together, these assays provide a multi-parametric profile of tissue physiologies and mechanics.

The MC-8™ is also amendable to high-throughput screening assays. The dimensions and layout of the 3D tissue constructs conform to 96-well plate format and therefore 96-well-based assays and technologies (including spectroscopic measurements using a plate reader) can readily be used for processing and analyzing tissues fabricated in a MC-8™. This flexibility encourages the incorporation of tissue-based assays into current compound and drug screening programs for monitoring toxicological effects on cellular and tissue mechanics.



3D model tissues can be fabricated in 4 easy steps



Cells in the Mini-Construct Chamber™ (MC-8™) remodel the collagen matrix to form a membrane firmly attached to the bars

Technical Advantages:

- ◆ Save time and money with MC-8™ tissue fabrication system which requires only basic tissue culture equipment and skills
- ◆ Form a variety of 3D tissues using fibroblasts, epithelial cells, smooth muscle cells, myocytes, or co-cultures
- ◆ Perform easy microscopic and spectroscopic analyses of tissues through the open top and transparent bottom of the MC-8™
- ◆ Incorporate this engineered tissue-based technology into current compound and drug screening systems to improve efficacy and toxicology studies

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