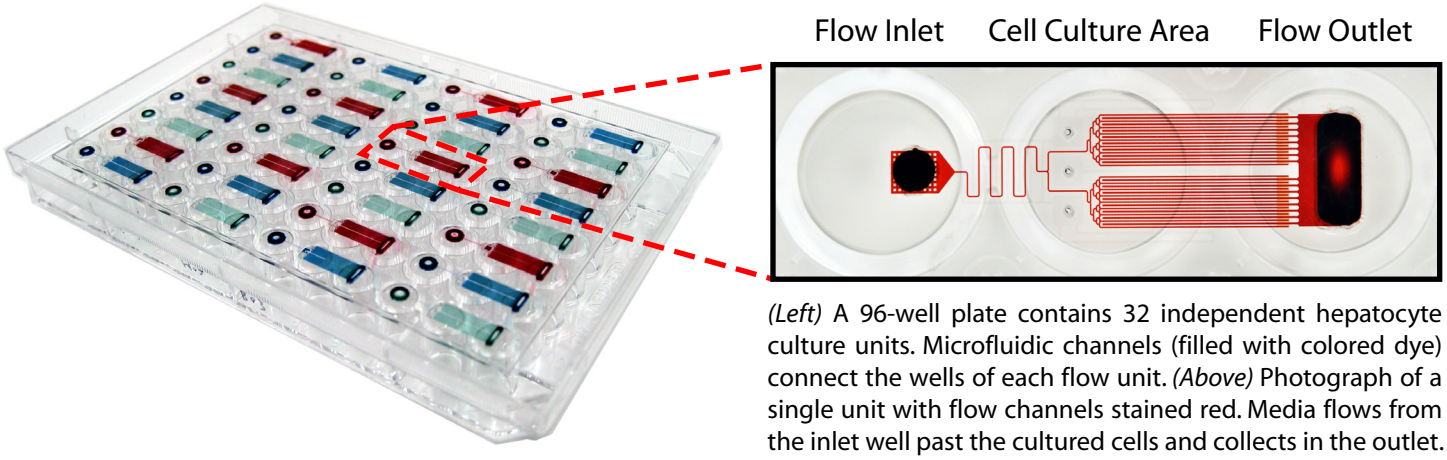
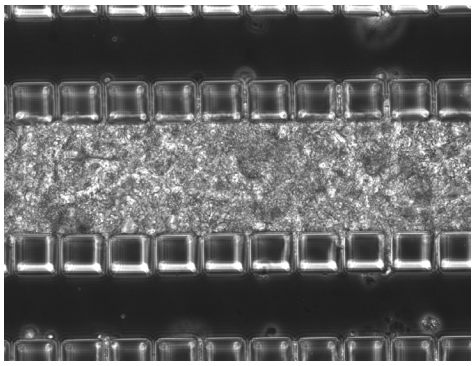
Pearl Microfluidic Perfusion Liver System

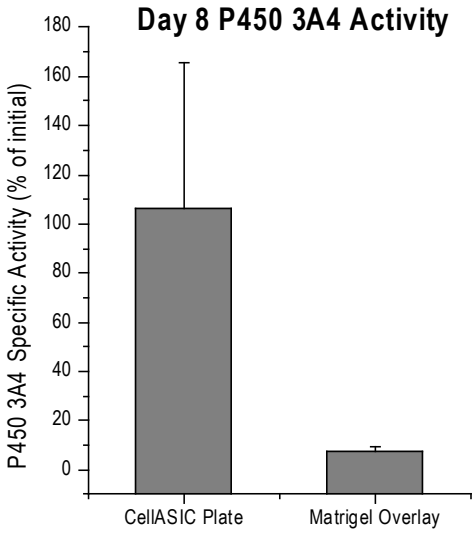
An innovative microfluidic design enables primary hepatocytes to be maintained in a "liver-like" configuration under continuous perfusion of media. The standard 96-well format and passive gravity driven perfusion allows simple integration with your current workflow.



(Left) A 96-well plate contains 32 independent hepatocyte culture units. Microfluidic channels (filled with colored dye) connect the wells of each flow unit. *(Above)* Photograph of a single unit with flow channels stained red. Media flows from the inlet well past the cultured cells and collects in the outlet.



Human hepatocytes in a segment of the microfluidic sinusoid network



Key Features

Enhanced primary hepatocyte function- Within 3 days after loading fresh suspension cells in the microfluidic plate, hepatocytes assemble into 3D aggregated cords with improved viability, metabolic function, and long term stability.

Innovative microfluidic sinusoid design- CellASIC's proprietary microfabrication methods enable the precision engineering of a liver-like environment, consisting of parallel hepatocyte cords fed by micro-capillary channels under continuous perfusion. A set of oxygenation channels maintains adequate gas transport.

User-friendly Operation- The standard layout allows the advanced microfluidic units to be operated just like a typical 96-well plate. The gravity driven perfusion design eliminates the need for pump or tubing connections-- simply fill the inlet well with your exposure solution. Compatible with plate readers, microscopy, or downstream analysis of the flow through media.

Technical Specs

Plate format: SBS standard 96 well plate
Units per plate: 32
No. of hepatocytes per unit: 20,000-50,000
Perfusion rate: 100 ul/day (single unit)
Sinusoids per unit: 16
Sinusoid dimensions: 3x0.1x0.04 mm
Gas diffusion membrane: 50 um silicone
Bottom surface: #1.5 thickness coverglass

www.cellasic.com
info@cellasic.com
Toll Free: 866.316.1259
Main: 510.785.9846

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