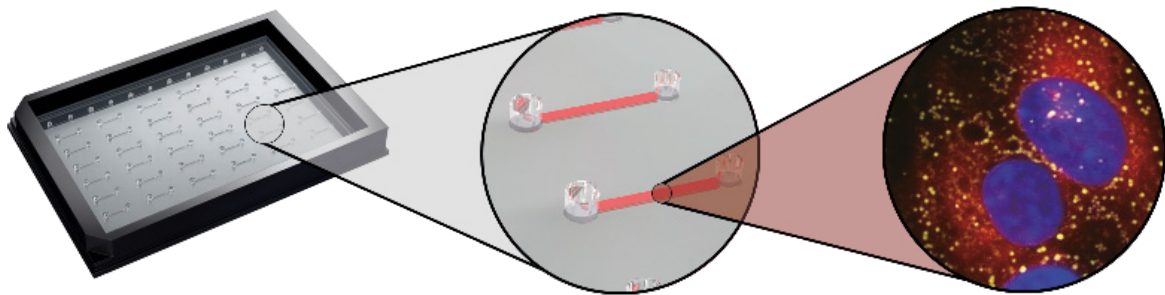


# CEP for 3D micro cell culture platform

Cellular Environment Platform



Developed by Ushio in collaboration with the Institute for Integrated Cell-Material Sciences (iCeMS) at Kyoto University (Japan), the CEP Microplate was designed to minimize contamination, for improved results in three-dimensional cell culture and organs-on-chips.

Super-transparent COP organs-on-chip using Photobonding® process

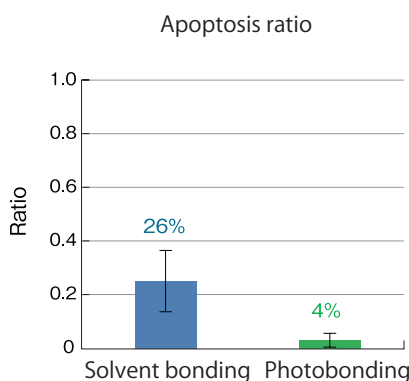
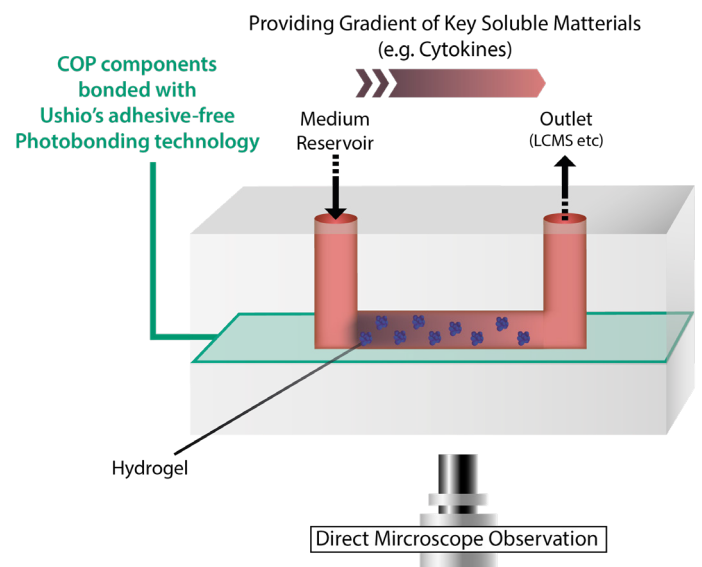
## Improved Microscopy

Due to the inherent characteristics of the COP resin (high transparency, low auto-fluorescence, low absorption, meniscus-free structure, etc.), better results can be obtained in fluorescence and bright-field microscopy

## Adhesive-free and solvent-free technology

Manufactured using Ushio's proprietary Photobonding® approach which does not involve the use of any adhesives, organic solvents or coating agents

Plates do not contain residual adhesives or solvents which can lead to cytotoxicity.



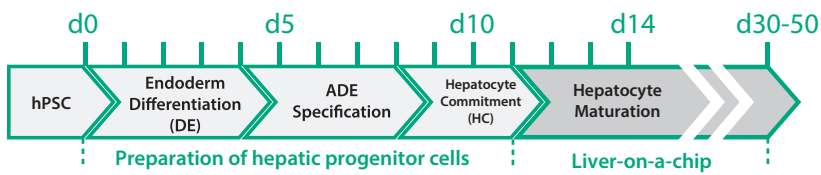
In an experiment comparing the maturation of iPS cells, it was seen that no significant apoptosis ratio (<5%) was found when the Ushio COP-based microplate was used. In contrast, an alternative microplate led to an apoptosis ratio > 25%. Even though the competitive microplate was advertised as glue-free, it was apparently prepared using organic solvents or other coating agents whose residual levels impacted cell viability. Clearly, the purity of the microplates is critical in achieving satisfactory results in cell experiments.

## Enhanced Screening

Due to the small size of the Ushio system, reduced volumes of cells and drug molecules are required, leading to reduced costs and improved efficiency. Furthermore, drug screening can be accomplished more easily with cells which proliferate slowly.

## Case Studies:

### iPS/ES cell differentiation platform



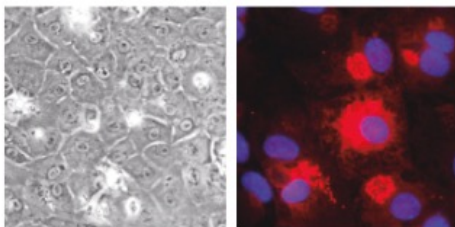
The CEP plate can be used as a cell maturation platform offering a 3D clutring environment.

In a Liver-on-a-Chip application, the differentiation and maturation of iPS cells was conducted using the CEP platform. Increased hepatic function, quantified using hepatic function markers such as CYP450s, was observed compared to cells matured with standard 2d cell plates

### Creation of disease models in a microscale culture

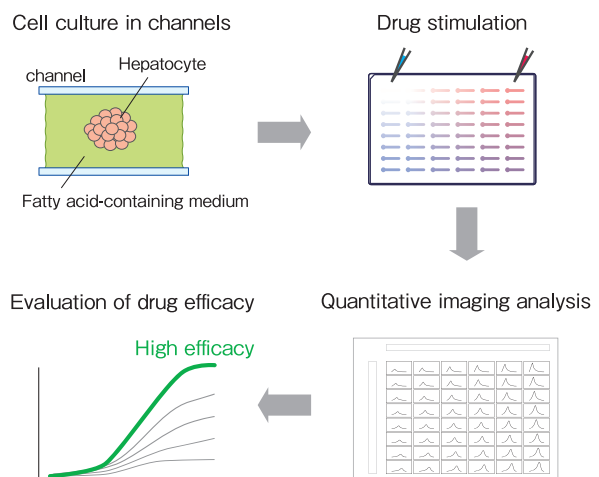
The CEP plate can be used as a platform to prepare specific disease models such as NASH/NAFLD models.

The CEP plate can offer simpler morphological and immunofluorescence (IFA) results by direct observation without removing the cells from the plate



### Compound screening (middle throughput)

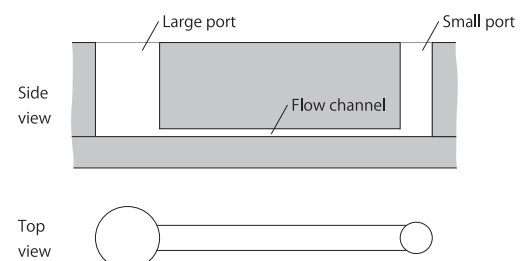
48 well channels allow quantitative evaluation including direct imaging analysis to compare efficacy of various drug candidates, or dosage level



## The Plates are available in two sizes

### Product specifications:

Product code	CEP-001	CEP-001
Size	Standart culture plate	Slide glass size
	128.0 x 86.0 mm	75.5 x 25.5 mm
Number of flow chnnels	48	8
Surface characteristics	Designed for cell culturing (hydrophilic, good adhesion)	
Packaging	Individually packed (Sterilized, EOG)	
Material	COP (Cyclo Olefin Polymer)	
Refractive index	1.53	
Key features	Produced with Photobonding® equipment (Adhesive-free and solvent-free)	



\* Actual dimensions are different from the above image.

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