

Request Information

Permalink

## Stem Cell Derived Placenta-On-A-Chip

Tech ID: 33767 / UC Case 2024-926-0

### BRIEF DESCRIPTION

This technology offers a groundbreaking approach to mimic human placental development and study pregnancy-related complications in vitro.

### FULL DESCRIPTION

Researchers at UC Irvine have developed a placenta-on-a-chip technology utilizing human induced pluripotent stem cells (iPSCs) to create placental organoids within a microfluidic device, simulating the human placental environment and its interactions with maternal vasculature. This innovative platform enables the study of placental development, drug toxicity, and various pregnancy-associated complications without the ethical and practical limitations of using human subjects.

### SUGGESTED USES

- » Research and development in developmental biology and maternal health.
- » Drug toxicity and efficacy testing specific to pregnancy.
- » Advanced academic and pharmaceutical research into pregnancy complications and fetal development.
- » Innovative platforms for studying the effects of environmental factors on placental and fetal health.

### ADVANTAGES

- » Enables the study of human placental development and diseases in vitro.
- » Overcomes ethical and accessibility issues associated with using human subjects and placental samples.
- » Provides a physiologically relevant model with the inclusion of vascular structures.
- » Offers an unlimited source of placental cells for research purposes.
- » Facilitates disease modeling and toxicity screening with higher reproducibility and lower costs.

### PATENT STATUS

Patent Pending

### CONTACT

Alvin Viray  
aviray@uci.edu  
tel: 949-824-3104.



### OTHER INFORMATION

#### CATEGORIZED AS

- » **Medical**
  - » Research Tools
- » **Research Tools**
  - » Other
  - » Screening Assays

#### RELATED CASES

2024-926-0

**UCI** Beall  
Applied Innovation

5270 California Avenue / Irvine, CA  
92697-7700 / Tel: 949.824.2683



© 2024, The Regents of the University of  
California  
[Terms of use](#)  
[Privacy Notice](#)