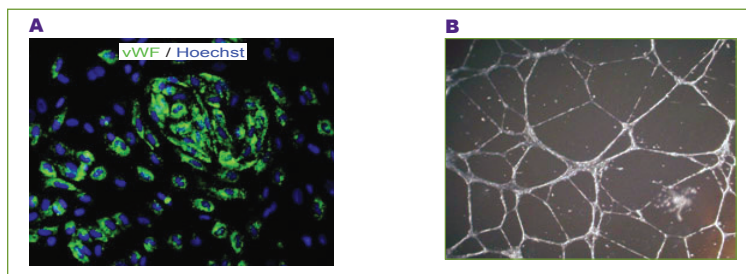


## iCell® Endothelial Cells

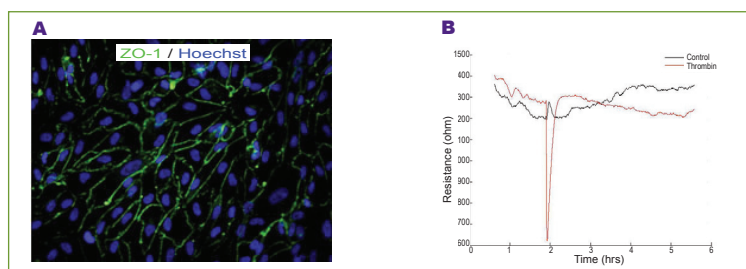
Cellular Dynamics offers iCell® Endothelial Cells, human induced pluripotent (iPS) cell-derived endothelial cells that provide a relevant, fully functional, in vitro human model and exhibit the expected characteristics and functions. These cells enable powerful new strategies for vascular-targeted drug discovery, tissue regeneration, and predictive disease modeling.

Endothelial cells play a key role in a broad range of physiological, immunological, and pathological processes across many disease states. Endothelial dysfunction is a common promoter of cardiovascular disease, atherosclerosis, inflammation, high blood pressure, and more. Additionally, endothelial cells separate circulating blood from the brain, an interface known as the blood-brain barrier. While vital for protection against bacterial infections, the blood-brain barrier also presents a challenge in the delivery of diagnostic and therapeutic agents to the brain.

Unfortunately, current endothelial cell models are not truly reflective of human biology thus decreasing their utility in endothelial dysfunction studies. Additional growth factors are commonly added to cultures to overcome poor growth or attachment issues at the expense of altering endothelial cell function. In addition, these cell models are limited in quantity and display batch-to-batch variability. iCell Endothelial Cells overcome these limitations, providing a robust, well-characterized, highly reproducible in vitro model for vascular biology research and drug discovery.



**▲ Figure 1: iCell Endothelial Cells Display Expected Markers and Functions**  
 (A) iCell Endothelial Cells, immunostained for von Willebrand Factor (vWF), showed characteristic Weibel-Palade body staining. (B) iCell Endothelial Cells exhibit the capacity to form tubes in a thick layer of Matrigel.



**▲ Figure 2: iCell Endothelial Cells Demonstrate Barrier Functions**  
 To assess the barrier function, (A) iCell Endothelial Cells were immunostained for the tight junction protein ZO-1, and (B) the resistance was quantified by measuring the transcellular electrical resistance. After adding thrombin, the cell's barrier function was disrupted, as shown by the decrease in resistance. After a short period of time, the cells recovered.

### Advantages

- Human cells:** iCell Endothelial Cells are terminally differentiated from human iPS cells and exhibit characteristics and functions of endothelial cells.
- Homogenous and reproducible:** iCell Endothelial Cells are highly pure, providing biologically relevant and reproducible results.
- Acute and long-term testing:** iCell Endothelial Cells actively proliferate, remaining viable and pure in culture for weeks, enabling assessment of both acute and sub-chronic responses.
- Easy to implement:** iCell Endothelial Cells are shipped cryopreserved with cell culture medium supplement specifically formulated for optimal cell performance. Simply thaw and use.

## Applications

iCell Endothelial Cells are amenable to a variety of assays including:

- Cell adhesion
- Cell invasion and migration
- Cell permeability
- Cell proliferation
- Impedance/transendothelial electrical resistance
- Tubular formation

## Specifications

<b>Cell Type</b>	Endothelial cells
<b>Organism</b>	Human
<b>Source</b>	Differentiated from a CDI reprogrammed human iPS cell line
<b>Quantity</b>	>1.0 M viable cells/unit
<b>Shipped</b>	Frozen
<b>Storage</b>	Liquid nitrogen
<b>Media</b>	iCell Endothelial Cells Medium Supplement

## Ordering Information

Product	Kit Components	Catalog #
iCell Endothelial Cells	>1.0 x 10 <sup>6</sup> viable cells Medium Supplement*	ECC-100-010-001

\* Additional medium required: VascuLife VEGF Medium Complete Kit (LifeLine Cell Technologies, Catalog # LL-0003)

## For More Information

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## CDI Products & Services

### iCell Cardiomyocytes

Human heart cells derived from induced pluripotent stem (iPS) cells and specifically designed for drug efficacy research, toxicity screens, and more.

### iCell Endothelial Cells

Human iPS cell-derived interior blood vessel cells for vascular-targeted drug discovery and predictive disease modeling.

### iCell Hepatocytes (Coming 2012)

Human liver cells, produced from iPS cells, for preclinical drug development, hepatotoxicity testing, and disease research.

### iCell Neurons

Human iPS cell-derived brain cells for drug discovery, neurotoxicity testing, and disease research.

### MyCell™ iPS Cell Services

Have a unique genotype or disease phenotype? Ask about our custom iPS cell reprogramming and terminal cell differentiation products and services.

### iCertification Training Programs

Master the use of iCell products by completing an iCertification Training Program.

