



iCell® Astrocytes

iCell® Astrocytes from Cellular Dynamics International (CDI) are a heterogeneous population of human astrocytes derived from induced pluripotent stem cells. These cells provide a biologically relevant human model for drug discovery and disease research.

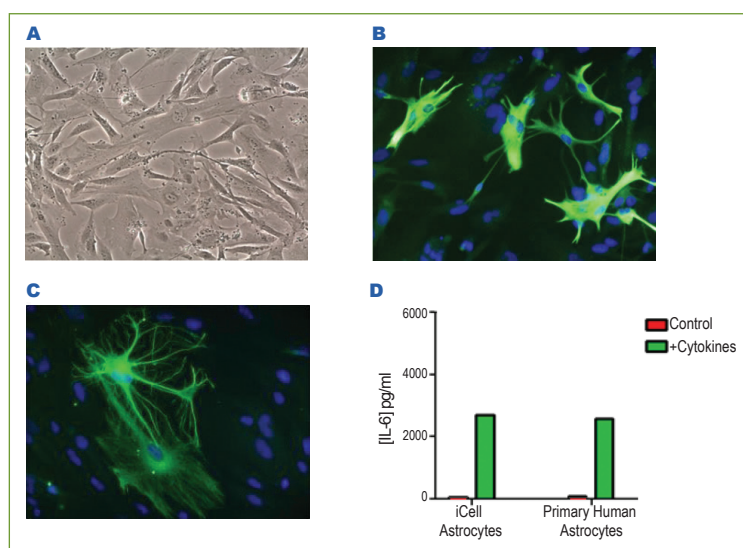
Astrocytes, the most abundant cell type in the central nervous system, create and maintain the brain architecture and perform various essential functions including brain homeostasis, distribution of energy substances, and synaptogenesis. In addition, recent research has shown that the loss of or changes in normal astrocyte functions play a critical role in neurological disorders and neurodegenerative diseases, such as Alzheimer's and Parkinson's diseases.

A more biologically relevant alternative to current cell models, iCell Astrocytes offer a reliable source of high quality, high purity human astrocytes for in vitro astrocyte-

mediated neurotoxicity, targeted drug discovery, blood brain barrier modeling, and other life science research. These cells express the characteristic proteins, S100 calcium binding protein B (S100 β) and glial fibrillary acidic protein (GFAP), and secrete trophic factors with stimulation.

Advantages

- Human cells:** iCell Astrocytes are differentiated from human iPS cells and exhibit functional characteristics similar to native human astrocytes.
- Homogenous and reproducible:** iCell Astrocytes are highly pure, providing biologically relevant and reproducible results.
- Acute and long-term testing:** iCell Astrocytes proliferate and remain viable and pure in culture for weeks, enabling assessment of both acute and sub-chronic responses.
- Ideal for co-culture systems:** iCell Astrocytes are generated from the same iPS cell line as iCell Neurons, thus providing genetic consistency for co-culture studies.
- Easy to implement:** iCell Astrocytes are shipped cryopreserved. Simply thaw and use.



▲ Figure 1: iCell Astrocytes Exhibit Characteristics of Native Human Astrocytes

A highly pure astrocyte population, iCell Astrocytes show (A) typical morphology and (B) expression of GFAP. Upon stimulation with $TNF\alpha$, $IL-1\beta$, and $IFN\gamma$, iCell Astrocytes demonstrate (C) changes in cell morphology (stained with GFAP, green) and (D) upregulation of the IL-6 secretion, a pro-inflammatory cytokine.

Applications

iCell Astrocytes are amenable to a variety of biochemical and cellular assays including:

- Astrocyte-mediated neurotoxicity
- Trophic factor secretion
- Co-culture environments

Specifications

Cell Type	Astrocytes
Organism	Human
Source	Differentiated from a CDI reprogrammed human iPS cell line
Quantity	>1.0 x 10 ⁶ viable cells/unit
Shipped	Frozen
Storage	Liquid nitrogen
Media	None

Ordering Information

Product	Component(s)	Catalog #
iCell Astrocytes*	>1.0 x 10 ⁶ viable cells	ASC-100-020-001-PT

* Currently available as a prototype product

For More Information

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CDI Products & Services

iCell Products

Provide access to biologically relevant, human iPS cells for disease modeling, drug discovery, toxicity testing, and regenerative medicine. CDI's rapidly growing portfolio of iCell products includes human cardiomyocytes, neurons, hepatocytes, endothelial cells, astrocytes, hematopoietic progenitor cells, skeletal myoblasts, dopaminergic neurons, and others.

Visit the CDI website for the most current list of supported cell types.

MyCell® Products

Include differentiated cells produced from disease-associated iPS cell lines, as well as iPS cell reprogramming, genetic engineering, and differentiation from customer-defined samples.

iCertification Training Programs

Master the use of iCell products by completing an iCertification Training Program. Attendees receive in-depth, interactive training on the handling and application of iCell products on cutting-edge technologies.

