



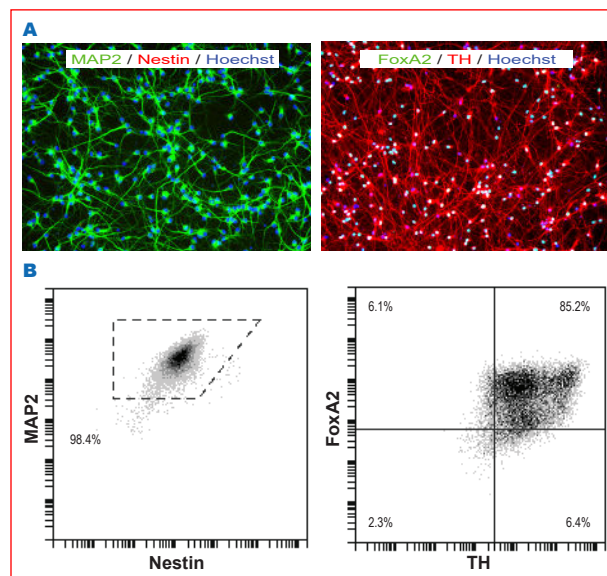
iCell® DopaNeurons

iCell® DopaNeurons from FUJIFILM Cellular Dynamics, Inc. (FCDI), are the only commercially available human midbrain dopaminergic neurons. Floor plate-derived from human induced pluripotent stem (iPS) cells, these high quality, highly pure cells provide a relevant in vitro system to facilitate discovery, neurotoxicity, and regenerative medicine research.

Midbrain dopaminergic neurons are the main source of dopamine in the mammalian central nervous system. They are essential for controlling complex behaviors including voluntary movement, reward processing, and working memory. Their loss is associated with Parkinson's

disease, a prominent neurological disorder. As age-related neurodegenerative diseases are largely limited to humans, the development of effective therapies requires applicable models like iCell DopaNeurons.

Fully functional, iCell DopaNeurons express key transcription factors and markers (for example Nurr1, EN1, Lmx1/FoxA2, and tyrosine hydroxylase) that are characteristically found in adult human dopaminergic neurons from the substantia nigra compacta and ventral tegmentum. iCell DopaNeurons are cryopreserved and available in large-scale quantities to investigate native neural biology and neurodegenerative diseases.



▲ Figure 1: iCell DopaNeurons Provide Relevant Biology
 (A) Immunostaining shows the expression of characteristic neuron marker MAP2 and midbrain dopaminergic neuron markers FoxA2 and TH with the absence of the progenitor marker nestin. (B) Flow cytometry measurements demonstrate a highly pure population of fully differentiated neurons ($MAP2^{pos}/nestin^{neg}$) with a midbrain dopaminergic specificity ($FoxA2^{pos}/TH^{pos}$).

Advantages

- **Human cells:** iCell DopaNeurons are floor plate-derived dopaminergic neurons from human iPS cells ensuring complete regional specification for full functionality.
- **Highly pure:** iCell DopaNeurons are >70% tyrosine hydroxylase positive (TH^{pos}) midbrain dopaminergic neurons, enabling mechanistic studies of neurodegenerative diseases.
- **Homogenous and reproducible:** iCell DopaNeurons are fully differentiated neurons, not precursors, providing biologically relevant and reproducible results.
- **Easy to implement:** iCell DopaNeurons are shipped cryopreserved with optimized media. Simply thaw and use.

Applications

iCell DopaNeurons are amenable to a variety of uses including:

Cell-based Assays

- Cell viability
- Calcium signaling
- Dopamine release and reuptake
- Mitophagy
- Neurite outgrowth and retraction

Electrophysiological Applications

- Conventional patch clamp recording
- Microelectrode (MEA) recording

Specifications

Cell Type	Midbrain dopaminergic neurons
Organism	Human
Source	Differentiated from an FCDI reprogrammed human iPS cell line
Quantity	$\geq 1.0 \times 10^6$ or $\geq 5.0 \times 10^6$ viable cells per vial
Shipped	Frozen

Ordering Information

Item	Component(s)*	Catalog Number
iCell DopaNeurons Kit, 01279	$\geq 1.0 \times 10^6$ viable cells 100 ml Neural Base Medium 1 2 ml Neural Supplement B 1 ml Nervous System Supplement	R1088
	$3 \times \geq 1.0 \times 10^6$ viable cells 100 ml Neural Base Medium 1 2 ml Neural Supplement B 1 ml Nervous System Supplement	R1108
	$\geq 5.0 \times 10^6$ viable cells 100 ml Neural Base Medium 1 2 ml Neural Supplement B 1 ml Nervous System Supplement	R1032
iCell Neural Base Medium 1	100 ml Neural Base Medium 1	M1010
iCell Neural Neural Supplement B	2 ml Neural Supplement B	M1029
iCell Nervous System Supplement	1 ml Nervous System Supplement	M1031

* A User's Guide is provided in each iCell DopaNeurons Kit.

For More Information

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iCell Products

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

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

