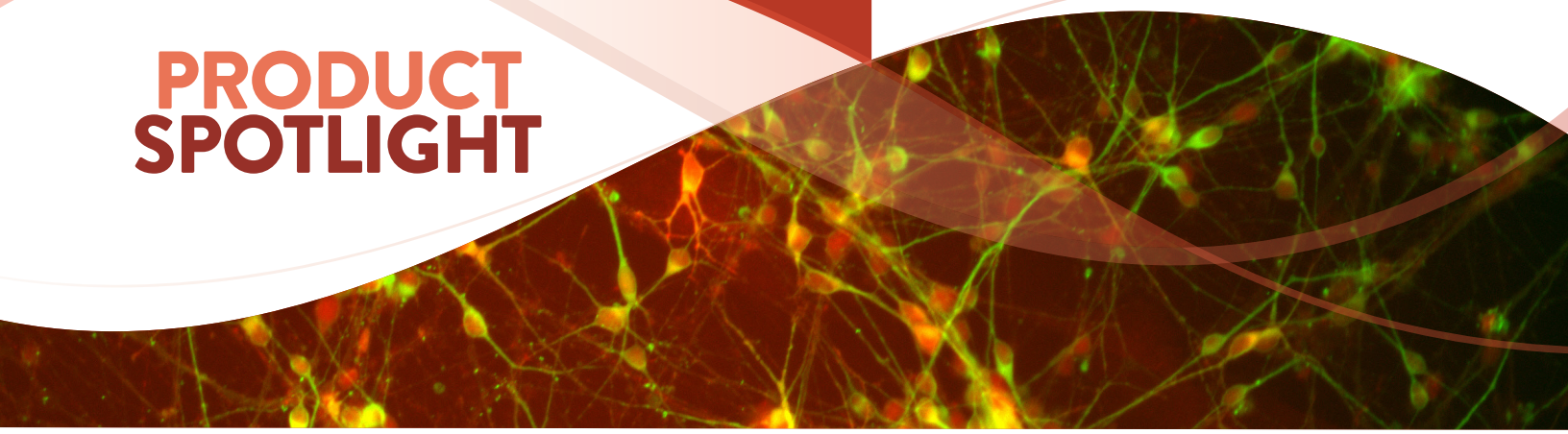
ATCC

PRODUCT SPOTLIGHT



NEURAL PROGENITOR CELLS

POTENT MODELS OF NORMAL AND DISEASE NEUROBIOLOGY

ATCC provides a complete system of Neural Progenitor Cell (NPC) solutions for investigating development, degeneration and regeneration, neurogenetics, neural excitability, nervous system disorders, neurotransmitters, and screening therapeutics:

- Normal and Parkinson's disease iPSC-derived NPCs
- Gene-edited, lineage-specific reporter NPCs
- Expansion and differentiation media kits
- Validated growth and differentiation protocols

NPCs are a great choice for investigators looking to reduce the time from initial culture to experiment readout as they eliminate the 4 to 8 weeks for iPSCs to differentiate into NPCs. ATCC NPCs are derived from a collection of well characterized, integration-free reprogrammed iPSCs. The single donor state of the parental line ensures reduced variation between experiments. Some of the other advantages of each lot of cells include:

- Reduce time to data acquisition
- Easy endpoint readout
- Lineage-specific readout from reporter-labeled NPCs
- Post-thaw cell viability: >80%
- Post-thaw viable cell number: >1x10^6 cells/vial
- Longevity: >15 PDLs or 5 passages
- Marker expression: Nestin and Pax 6 positive, Tra-I-60 negative
- Neuronal differentiation potential:
- >70% Tuj1+ early neurons
- >10% TH+ dopaminergic neurons
- Negative for bacteria, yeast, fungi, viruses, and mycoplasma

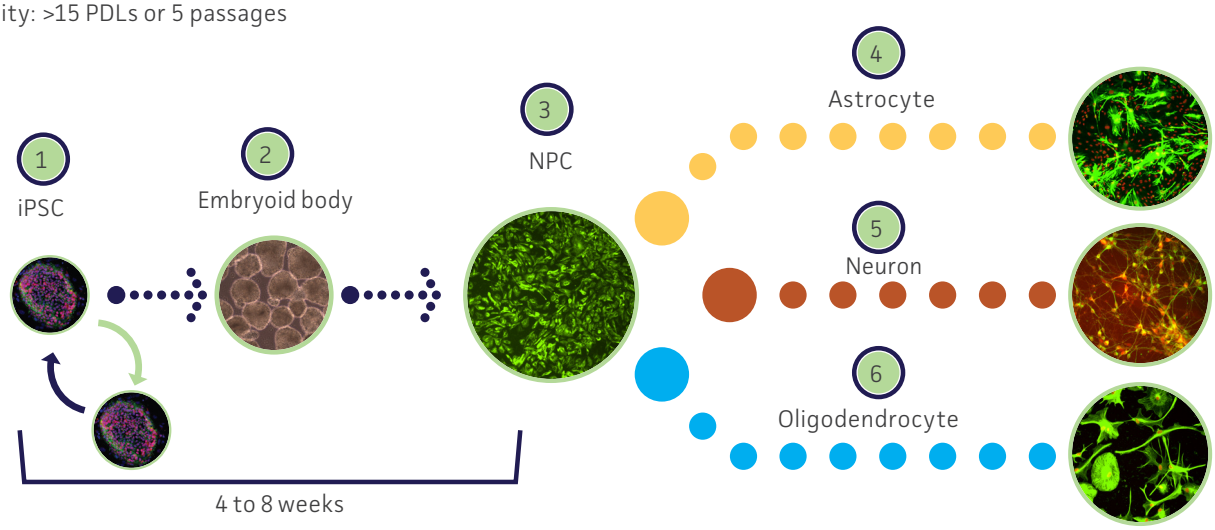


Figure 1: NPCs save time and have high differentiation potential. It takes 4-8 weeks for iPSCs (1) to form embryoid bodies (2) and then differentiate into NPCs (3; indicated by positive Nestin staining). ATCC NPCs (3) can either be expanded or differentiated into (4) astrocytes, (5) dopaminergic neurons, and (6) oligodendrocytes (indicated by positive GFAP, TH, and O4 staining, respectively).

MONITOR YOUR NEURAL DIFFERENTIATION

NPCs exhibit a full differentiation spectrum; they can differentiate into neurons, astrocytes, or oligodendrocytes (Figure 1), identified by positive staining for lineage-specific markers such as glial fibrillary acidic protein (GFAP; astrocyte), class III beta-tubulin (Tuj1; early neuron) and tyrosine hydroxylase (TH; dopaminergic neuron), and oligodendrocyte marker 4 (O4, oligodendrocyte). In addition, ATCC has reporter-labeled NPCs, which ensure lineage identity in your experiments by expressing GFP or NanoLuc® during differentiation (Figure 2).

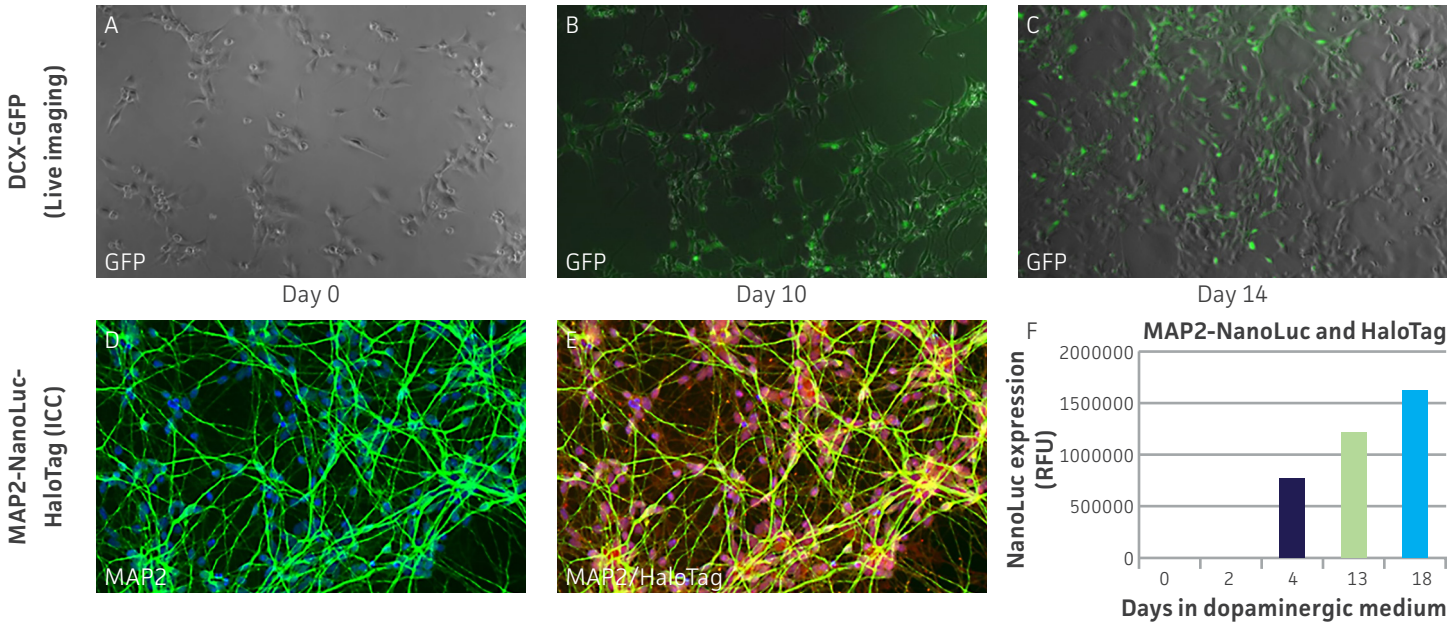


Figure 2: Expression of the GFP or NanoLuc-HaloTag® reporter during neuron differentiation. Differentiation in reporter-labeled NPCs can be tracked by (A-C) live imaging with GFP, (D and E) immunocytochemistry using MAP2 and HaloTag antibodies, or (E) quantified via luciferase activity (Images courtesy of XCELL Science).

ATCC® No.	Designation
ACS-5001™	Neural Progenitor Cells (from iPSCs derived from dermal fibroblasts from a donor diagnosed with Parkinson's disease)
ACS-5003™	Neural Progenitor Cells (from iPSCs derived from CD34+ cells)
ACS-5004™	Neural Progenitor Cells (from iPSCs derived from CD34+ cells)
ACS-5005™	DCX-GFP Reporter Normal Neural Progenitor Cells (from iPSCs derived from CD34+ cells)
ACS-5007™	MAP2-NanoLuc-HaloTag Reporter Normal Neural Progenitor Cells (from iPSCs derived from CD34+ cells)
ACS-5006™	GFAP-NanoLuc-HaloTag Reporter Normal Neural Progenitor Cells (from iPSCs derived from CD34+ cells)
ACS-3003™	Growth Kit for Neural Progenitor Cell Expansion
ACS-3004™	Neural Progenitor Cell Dopaminergic Neuron Differentiation Kit

RELATED PRODUCTS

ATCC® No.	Designation
30-2006™	DMEM: F-12 Medium, 500 mL
ACS-3035™	Cell Basement Membrane Gel, 5 mL
ACS-3020™	Stem Cell Freezing Media, 1 x 20 mL
ACS-3010™	Stem Cell Dissociation Reagent 250 mg

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