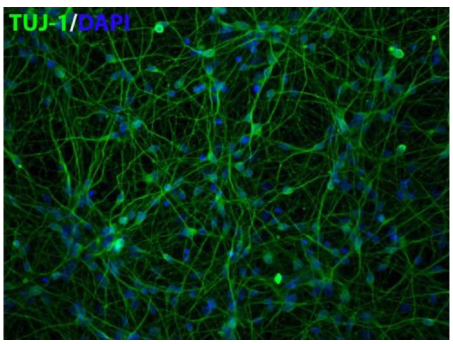
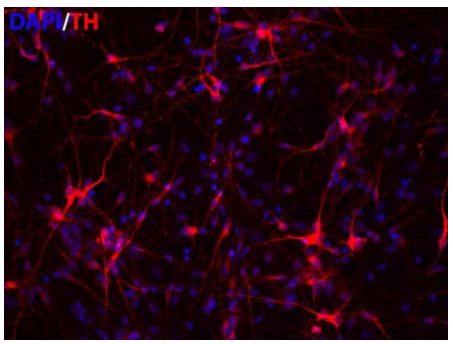
Applied StemCell

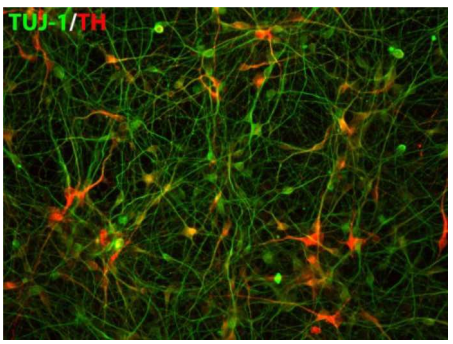
Genome editing *in vitro* and *in vivo*

Human iPSC-derived Dopamine Neurons

Functional dopamine neurons derived from well-characterized iPSCs and NSCs







Benefits & Applications:

- Reliable predictive models of neurological disorders
- Drug Screening
- Neuroprotection assays and research
- Neurotoxicity screening

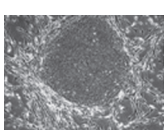
Immunocytochemical characterization of mature dopamine neurons shows >90% of total cells expressed Tuj-1 marker (green; neuronal type β III tubulin) and >30% expressed dopaminergic marker (red; TH, Tyrosine hydroxylase); nuclear staining with DAPI (blue).

Key Features:

- Yields high purity, functional dopamine neurons after maturation
- Mature dopamine neurons can be maintained long-term in culture (up to 3 weeks)
- Two dopaminergic lineages derived from one male donor and one female donor
- Isogenic panels of neural stem cells, neurons (DA and mixed), astrocytes from same donor iPSCs
- Ideal model for disease modeling, neuroprotection and neurotoxicity screening assays
- Xeno-free & Integration-free derivation and culturing
- Well-optimized DOPA induction and maturation media available for differentiation and maintenance of dopaminergic neurons

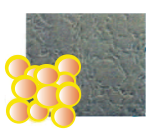
Custom Differentiation Service

Differntiate YOUR iPSCs to cell line lineage of your choice



iPS Cells
ASE-9109 (male)
ASE-9110 (female)

Differentiation



Neural Stem Cells
(Pax6, Sox1)
ASE-9234, ASE-9234F

Astrocyte
Precursor Cells

ASE-9322P, ASE-9322PF
ASE-9322K, ASE-9322KF

Co-Culture with Neurons
Disease Modeling
Drug/Tox Screening
Mature Astrocytes (GFAP)

ASE-9322M, ASE-9322MF

Disease Modeling (PD)
Drug Screening/Tox Studies
Dopaminergic Neurons (TH)

ASE-9323, ASE-9323F
ASE-9323K, ASE-9323F

Drug Testing
Tox Studies
Disease Modeling
Mixed Neurons (GABA)

ASE-9323, ASE-9323F
ASE-9323K, ASE-9323KF

iPSC-derived Dopamine Neuron Product Catalog:

ASE-9323	Dopamine Neurons (iPSC from Blood Cells; Male)
ASE-9323F	Dopamine Neurons (iPSC from Blood Cells; Female)
ASE-9323K	Dopaminergic Neuron Starter Kit (iPSC from Blood Cells; Male)
ASE-9323KF	Dopaminergic Neuron Starter Kit (iPSC from Blood Cells; Female)
ASE-9323DI	DOPA Induction Media 100 mL
ASE-9323DM	DOPA Maturation Media 100 mL

Related Products: Master iPSCs and Differentiated-Cell Lines

ASE-9109	Human iPSC (iPSC from Blood Cells; Male); Master Lines for Neural Differentiation and Genome Engineering
ASE-9110	Human iPSC (iPSC from Blood Cells; Female); Master Lines for Neural Differentiation and Genome Engineering
ASE-9324	Neural Stem Cells (iPSC from Blood Cells; Male)
ASE-9324F	Neural Stem Cells (iPSC from Blood Cells; Female)
ASE-9324SM	NSC Maintenance Media 100 mL
ASE-9322	Astrocyte Precursors (iPSC from Blood Cells; Male)
ASE-9322F	Astrocyte Precursors (iPSC from Blood Cells; Female)
ASE-9322M	Astrocytes Mature (iPSC from Blood Cells; Male)
ASE-9322MF	Astrocytes Mature (iPSC from Blood Cells; Female)
ASE-9322K	Astrocytes Starter Kit (iPSC from Blood Cells; Male)
ASE-9322KF	Astrocytes Starter Kit (iPSC from Blood Cells; Female)
ASE-9322DI	Astrocyte Induction Media 100 mL
ASE-9322DM	Astrocyte Maturation Media 100 mL
ASE-9321	Neurons (iPSC from Blood Cells; Male)
ASE-9321F	Neurons (iPSC from Blood Cells; Female)
ASE-9321K	Neurons Starter Kit (iPSC from Blood Cells; Male)
ASE-9321KF	Neurons Starter Kit (iPSC from Blood Cells; Female)
ASE-9321DI	Neuron Induction Media 100 mL
ASE-9321DM	Neuron Maturation Media 100 mL

References:

- Pei, Y., Peng, J., Behl, M., Sipes, N. S., Shockley, K. R., Rao, M. S., … Zeng, X. (2016). Comparative Neurotoxicity Screening in Human iPSC-derived Neural Stem Cells, Neurons and Astrocytes. Brain Research, 1638(Pt A), 57–73.
- Shaltouki, A., Sivapatham, R., Pei, Y., Gerencser, A. A., Momčilović, O., Rao, M. S., & Zeng, X. (2015). Mitochondrial Alterations by PARKIN in Dopaminergic Neurons Using PARK2 Patient-Specific and PARK2 Knockout Isogenic iPSC Lines. Stem Cell Reports, 4(5), 847–859.
- Efthymiou, A., Shaltouki, A., Steiner, J. P., Jha, B., Heman-Ackah, S. M., Swistowski, A., ... & Malik, N. (2014). Functional screening assays with neurons generated from pluripotent stem cell–derived neural stem cells. Journal of Biomolecular Screening, 19(1), 32-43.
- Shaltouki, A., Peng, J., Liu, Q., Rao, M. S., & Zeng, X. (2013). Efficient generation of astrocytes from human pluripotent stem cells in defined conditions. Stem Cells, 31(5), 941-952.

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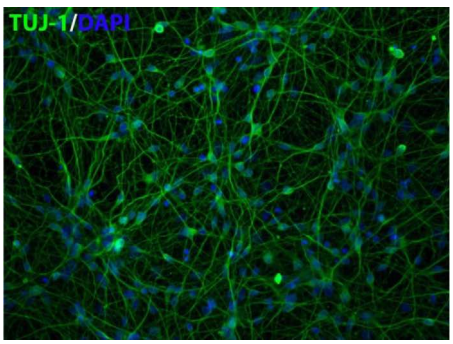

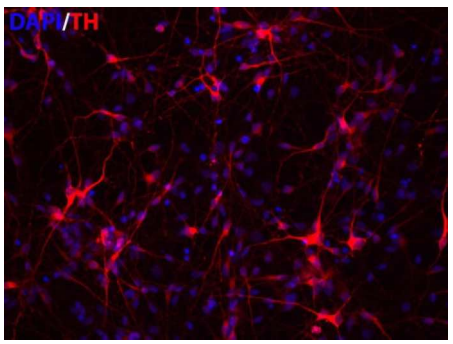

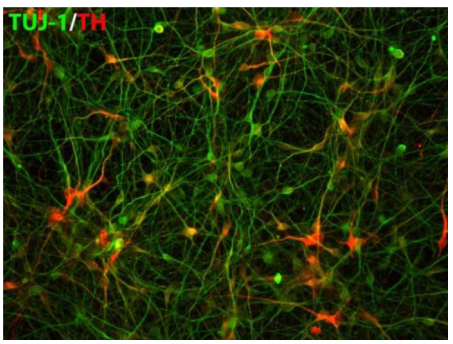

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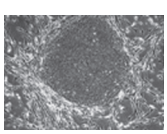

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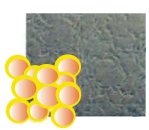

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