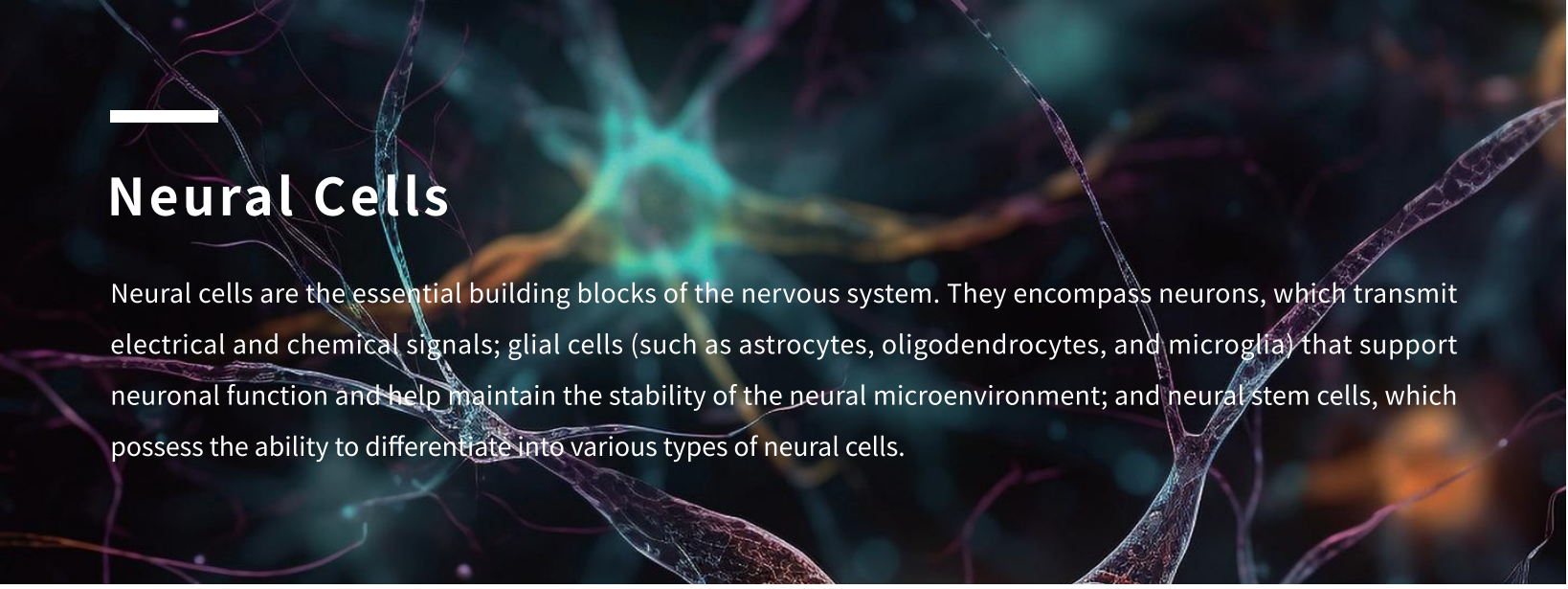
Procell

Neural Cell Culture Solutions

Advancing Neural Cell Culture and Applied Research



Neural Cells

Neural cells are the essential building blocks of the nervous system. They encompass neurons, which transmit electrical and chemical signals; glial cells (such as astrocytes, oligodendrocytes, and microglia) that support neuronal function and help maintain the stability of the neural microenvironment; and neural stem cells, which possess the ability to differentiate into various types of neural cells.

Neural Cell Culture Application Fields

Mechanisms of Neurological Disorders

Neural cell models are used to investigate the causes and progression of neurological diseases, such as Alzheimer's disease.

Drug Screening and Neurotoxicity Assessment

In vitro neural cell models are used for drug screening and neurotoxicity testing, supporting the development of new drugs.

Neural Interfaces and Brain-computer Interaction Technology

Research focuses on neuronal electrical signals to advance intelligent interaction systems.

Neural Regeneration and Repair

Neural stem cell characteristics and mechanisms are explored, advancing strategies for neural injury recovery.

Neural Computing and Artificial Intelligence

Neural network models for optimize and innovate brain-inspired computing and AI algorithms.

Brain Organoids and 3D Model Construction

This field simulates brain development and disease processes, supporting basic and translational research.

Neural Cell Culture Challenges

Primary Neural Cell Isolation Challenges

- Limited purity of isolated cells
- Low success rate of isolation
- High variability between batches

Neuronal Cell Culturing Challenges

- Decreased survival rates
- Reduced cell purity
- Indistinct synaptic morphology

Neural Stem Cell Culturing Challenges

- Slow growth rate
- Restricted passage numbers
- Prone to spontaneous differentiation and adherence

In neural cell culture, Procell has optimized the isolation and culture system, facilitating the high-purity and high-viability in vitro cultivation of neurons and neural stem cells.

Easily Obtain High-purity Neural Cells

Procell meets diverse research needs by offering primary neural cell isolation and culture kits. These kits simplify neural cell isolation, ensure high purity, and improve isolation success rates.

Product features

Certified Excellence
ISO 9001 certification for quality assurance

Stable Performance
Under standard operation, cell count exceeding 1×10^6 cells, purity > 90%

Cost Effective
Includes essential reagents required for experiments, offering affordable prices

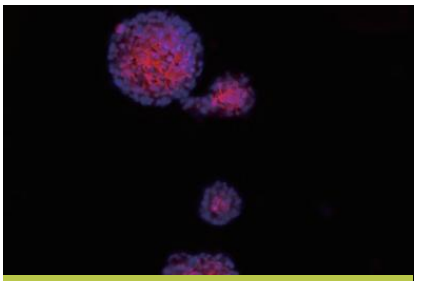
Dedicated Customer Support
Provides comprehensive step-by-step illustrated tutorials, paired with fast and expert technical assistance

Featured Product Lists

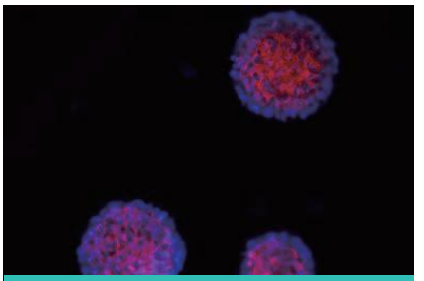
Product Name	Cat. No.	Size
Rat Neural Stem Cells Isolation and Culture Kit	P-CA-603	3 T/10 T
Mouse Neural Stem Cells Isolation and Culture Kit	P-CA-703	3 T/10 T
Rat Cortex Neuron Cells Isolation and Culture Kit	P-CA-604	3 T/10 T
Mouse Cortex Neuron Cells Isolation and Culture Kit	P-CA-704	3 T/10 T
Rat Astrocyte Cells Isolation and Culture Kit	P-CA-605	3 T/10 T
Mouse Astrocyte Cells Isolation and Culture Kit	P-CA-705	3 T/10 T

Rat Neural Stem Cells Isolation and Culture Kit

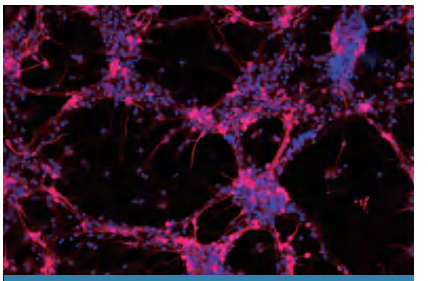
Immunofluorescence Experimental Results



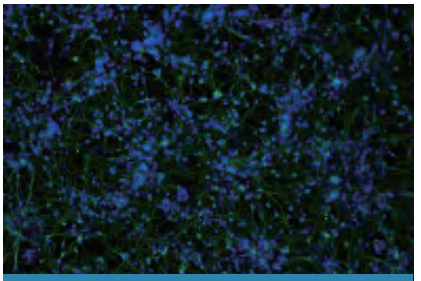
Rat Neural Stem Cells
Nestin, 200×



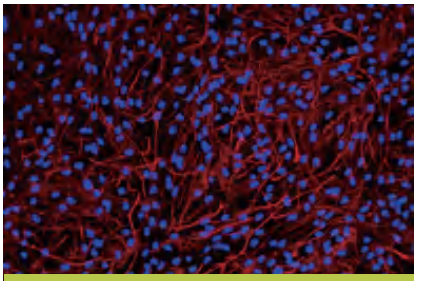
Mouse Neural Stem Cells
Nestin, 200×



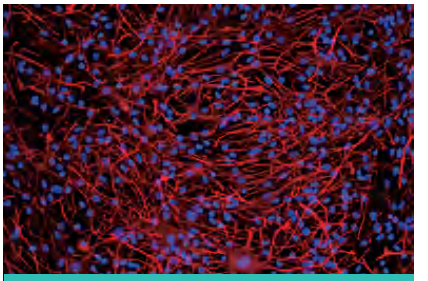
Rat Cortex Neuron Cells
β-Tubulin-III, 200×



Mouse Cortex Neuron Cells
β-Tubulin-III, 200×



Rat Astrocyte Cells
GFAP, 200×



Mouse Astrocyte Cells
GFAP, 200×

Neural Cell Culture Systems Optimization

Backed by over a decade of expertise and more than 2,000 validated experiments, the Procell team has developed reagents for neural cell culture that improve cell viability and purity, addressing key challenges in long-term culture.

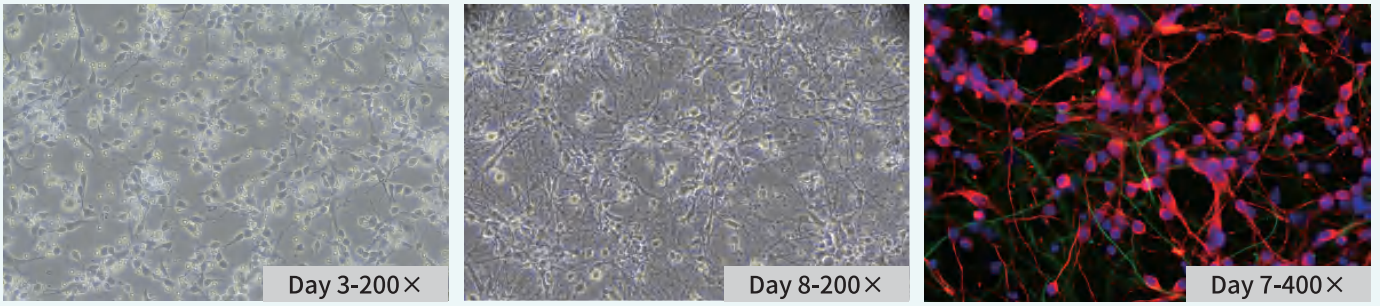
Neural Cell Culture Related Reagents

Product Name	Cat. No.	Size	Application
Neurobasal Medium	PM151223	500 mL	Optimized for most neuronal cultures, specifically to support long-term viability and differentiation of prenatal embryo-derived neurons.
Neurobasal Medium, powder	PM151223P	5×1 L/10 L/50 L/ 100 L/500 L	Powder reagent, PM151223-equivalent application, ready-to-use.
Neurobasal-A Medium	PM151236	500 mL	Optimized for most neuronal cultures, specifically to support long-term viability and differentiation of neonatal and adult brain neurons.
Neurobasal-A Medium, powder	PM151236P	5×1 L/10 L/50 L/ 100 L/500 L	Powder reagent, PM151236-equivalent application, ready-to-use.
DMEM/F12	PM150312	500 mL	Neural stem cell, glial cell, and ganglion cell basal medium.
B-27 Neuron Supplement, with vitamin A, 50×	PB180637	10 mL	Glial cell and neuronal cell culture supplements.
B-27 Neuron Supplement, without vitamin A, 50×	PB180638	10 mL	Neural stem cell and precursor cell supplements.
B-27 Neuron Supplement, without insulin, 50×	PB180645	10 mL	Eliminating exogenous insulin interference in experiments.
B-27 Neuron Supplement, without antioxidant, 50×	PB180646	10 mL	Eliminating exogenous antioxidant interference in oxidative stress–induced neural injury and apoptosis studies.
G-5 Supplement (100×)	PB180640	1 mL/5×1 mL	Glial and glioma cell culture supplements, often used in combination with Neurobasal.
N-2 Supplement (100×)	PB180641	5 mL	Compatible with all neural cell types, often combined with B-27.
Neuronal Medium (NM)	CM-ZY003	500 mL	General-purpose culture medium suitable for neuronal cells from different species and tissue origins.
Neural Stem Cell Medium (NSCM)	CM-ZY004	500 mL	General-purpose culture medium suitable for neural stem cells from different species and tissue origins.
Rat Neural Stem Cell Complete Medium	CM-R139	100 mL/4×125 mL	Promotes the proliferation of rat neural stem cells and maintains their optimal conditions.
Mouse Neural Stem Cell Complete Medium	CM-M139	100 mL/5×125 mL	Promotes the proliferation of mouse neural stem cells and maintains their optimal conditions.

For more related products, please visit www.procellsystem.com or contact local distributors.

Neuronal Cell Culture Case

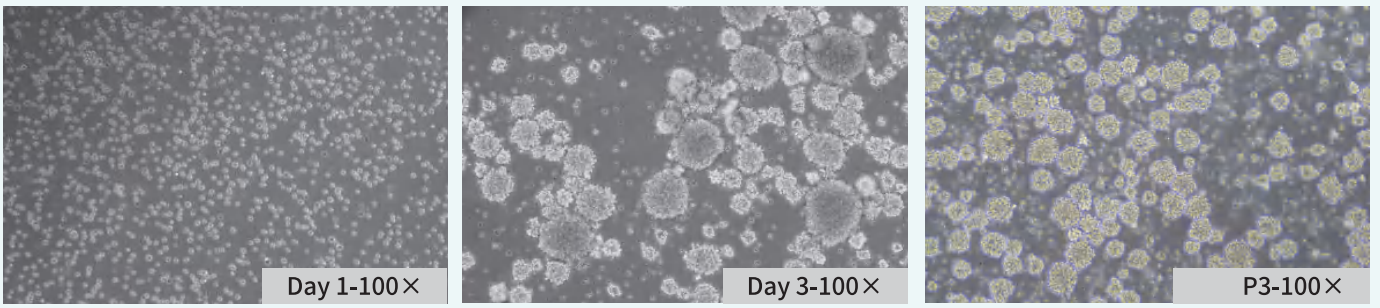
Culture System：Neurobasal Medium (PM151223) + 2% B-27 Neuron Supplement, with vitamin A, 50× (PB180637) + 1% GlutaMAX (PB180419).



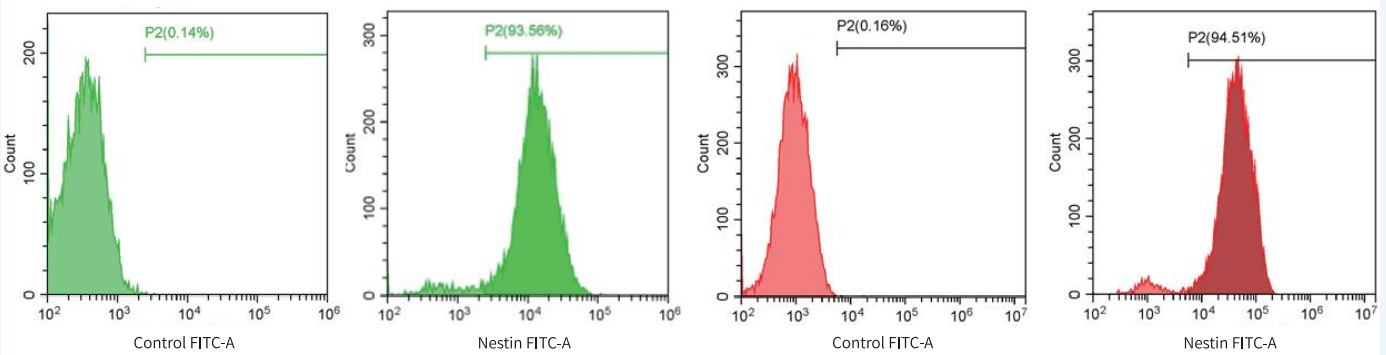
From Day 3 to Day 8, neuronal processes undergo marked elongation, increased branching, and progressive network formation through terminal interconnections. Cells remain viable for up to 14 d. On Day 7, immunofluorescence staining for TUBB3 (red), GFAP (green), and DAPI (blue) demonstrates a neuronal purity exceeding 90%.

Neural Stem Cell Culture Case

Culture System：DMEM/F12 (PM150312) + B-27 Neuron Supplement, without vitamin A, 50× (PB180638) + 20 ng/mL EGF + 20 ng/mL bFGF + 1% GlutaMAX (PB180419)



The neural stem cell culture system supports the rapid proliferation of rat neural stem cells within 72 h and enables continuous sub-culturing up to the third passage (P3) generation. The cells maintain a stable spherical structure without differentiation or cell attachment.



Neural stem cells at passage 2 (P2)

Neural stem cells at passage 3 (P3)

The third passage (P3) neural stem cells, analyzed by flow cytometry using Nestin, show a purity of > 90%, demonstrating their ability to sustain stemness and purity over the long term.

Product Citations, Empowering Neuroscience Research

Procell is committed to providing reliable neural cell culture solutions and products for researchers. It has supported numerous clients in publishing their neuroscience research findings in authoritative academic journals.

Product Name	Cat. No.	Title	Journal
DMEM/F12	PM150312	PKMYT1 kinase ameliorates cisplatin sensitivity in osteosarcoma (2025/5/21)	*Signal Transduction and Targeted Therapy*
Neurobasal Medium	PM151223	An engineered bionic nanoparticle sponge as a cytokine trap and reactive oxygen species scavenger to relieve disc degeneration and discogenic Pain (2024/1/18)	*ACS Nano*
Mouse Neural Stem Cell Complete Medium	CM-M139	Small extracellular vesicles from young plasma reverse age-related functional declines by improving mitochondrial energy metabolism (2024/4/16)	*Nature Aging*
Mouse Neural Stem cells Complete Medium	CM-M139	Neuron stem cell NLRP6 sustains hippocampal neurogenesis to resist stress-induced depression (2023/11/30)	*Acta Pharmaceutica Sinica B*
Rat Neural Stem Cell Complete Medium	CM-R139	Biomimetic “Trojan Horse” fibers modulate innate immunity cascades for nerve regeneration (2024/12/21)	*ACS Nano*
Rat Neural Stem Cell Complete Medium	CM-R139	Frog-derived neuroregenerative-peptide-reinforced bioactive hydrogels with injectability, thermosensitivity, and enhanced neurotrophic function for repairing central nervous injuries (2025/1/28)	*Small Structures*
Mouse Hippocampal Neuron Complete Medium	CM-M107	Berberine-inspired ionizable lipid for self-structure stabilization and brain targeting delivery of nucleic acid therapeutics (2025/3/10)	*Nature Communications*
Rat Cortex Neuron cells Complete Medium	CM-R105	Ligand-screened cerium-based MOF microcapsules promote nerve regeneration via mitochondrial energy supply (2023/11/30)	*Advanced Science*
B-27 neuron Supplement, without vitamin A, 50 ×	PB180638	Macrophage membrane-mediated targeted curcumin biomimetic nanoparticles delivery for diagnosis and treatment of spinal cord injury by suppressing neuroinflammation and ferroptosis (2024/11/1)	*Chemical Engineering Journal*
B-27 neuron Supplement, with vitamin A, 50 ×	PB180637	Temperature-induced membrane trafficking drives antibody delivery to the brain (2025/7/8)	*Biomedicine & Pharmacotherapy*
200 mM L-Alanyl-L-Glutamine Solution, 100 ×	PB180419	Theranostic applications of taurine-derived carbon dots in colorectal cancer: ferroptosis induction and multifaceted antitumor mechanisms (2025/6/16)	*International Journal of Nanomedicine*

For more citation information, please visit www.procellsystem.com.

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