

## Cell Therapy Systems™

# Neurobasal® CTS™ and Neurobasal®-A CTS™ Media

### Description

Neurobasal® medium and Neurobasal®-A medium supplemented with B-27® Supplement support cultivation of human glioblastoma, neurons, neural stem cells, and non-CNS lineage cell types with good viability and survival. Both media support the growth of neural and non-neural cells when supplemented with B-27® Supplement, and contain anti-oxidants to reduce reactive oxygen damage and no glutamate and aspartate for study of excitatory neurotransmitters.

Product	Catalog no.	Amount	Storage	Shelf Life*
Neurobasal® Medium CTS™	A13712-01	500 mL	2°C to 8°C, Protect From Light	12 months
Neurobasal®-A Medium CTS™	A13710-01			

\* Shelf Life duration is determined from Date of Manufacture.

### Product use

For Research Use or Non-Commercial Manufacturing of Cell-Based Products for Clinical Research. Caution: Not for direct administration into humans or animals.

### Important information

- Use Neurobasal® CTS™ Medium for pre-natal cultures
- Use Neurobasal®-A CTS™ Medium for post-natal cultures

### Safety information

For every chemical, read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

### Prepare media

For glioblastoma or neural stem cells, Neurobasal® media must be supplemented with 0.5 to 2 mM L-glutamine or GlutaMAX™-I, and a serum-free supplement or serum prior to use. The recommended supplement for human cells is B-27® Supplement (Cat. no. 17504).

### Plate cells

1. Coat autoclaved glass 12-mm diameter coverslips with 50 µg/mL poly-D-lysine in water (135 kD, Sigma) and incubate at room temperature overnight. The next day, aspirate the poly-D-lysine solution, rinse the coverslips once with water, and allow them to dry for one hour.
2. Plate human or hESC-derived cells at the desired concentration (i.e., 90–320 cells/mm<sup>2</sup>) on the poly-D-lysine coated coverslips in 60–150 µL Neurobasal®-A/B-27® Supplement (post-natal) or Neurobasal®/B-27® Supplement (pre-natal).
3. One hour after plating and incubating the cells (ambient oxygen with 5% CO<sub>2</sub> is acceptable but 9% oxygen with 5% CO<sub>2</sub> is preferable), quickly pick up the coverslips, allow them to drain, and transfer the cells to 0.4 mL of Neurobasal®-A/B-27® Supplement in a 24-well plate at 37°C. For post-natal neurons, aspirate the medium, rinse the coverslips once with warm Neurobasal®-A medium and refeed the cells with Neurobasal®-A medium supplemented with B-27® Supplement, 0.5 mM L-glutamine, 1% penicillin-streptomycin (Cat. no. 15070) and 5 ng/mL FGF-basic CTS™ (Cat. no. CTP0261).









4. When culturing the cells for longer than 4 days, remove one-half of the medium on day 3 or 4 and replace it with an equal volume of medium containing 10 ng/mL FGF-basic (post-natal neurons). For pre-natal neurons, perform subsequent medium changes (day 4) using Neurobasal® medium without glutamate to reduce glutamate toxicity in the culture. With neuroblastomas, the glutamate should be included in the medium for both plating and subsequent media changes.

### Related products

Product	Catalog no.
Dulbecco's Phosphate Buffered Saline CTS™ (DPBS) (1X), liquid, contains no calcium, magnesium, or phenol red	A12856
CELLstart™ CTS™	A10142
GlutaMAX™-I CTS™	A12860
TrypLE™ Select CTS™	A12859
FGF-basic Full Length CTS™ Recombinant Human	CTP0261
B-27® Supplement, XenoFree CTS™	A14867
Penicillin-Streptomycin	15070

### Explanation of symbols and warnings

The symbols present on the product label are explained below:

			
Use By:	Batch code	Keep away from light	Temperature Limitation
			
Catalog number	Consult instructions for use	Caution, consult accompanying documents	Sterilized using aseptic processing techniques

### Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at [www.lifetechnologies.com/termsandconditions](http://www.lifetechnologies.com/termsandconditions). If you have any questions, please contact Life Technologies at [www.lifetechnologies.com/support](http://www.lifetechnologies.com/support).

## Important licensing information

These products may be covered by one or more Limited Use Label Licenses. By use of these products, you accept the terms and conditions of all applicable Limited Use Label Licenses.

## References

- Brewer, G.J., Torricelli, J.R., Evege, E.K. and Price, P.J. (1993) Optimized survival of hippocampal neurons in B-27 supplemented NEUROBASAL. A new serum-free medium combination. *J. Neurosci. Res.* **35**: 567-576.
- Price, P.J. and Brewer, G.J. (2001) Serum-free media for neural cell culture. *Protocols for Neural Cell Culture*, 3<sup>rd</sup> edition. Chapter 19. Eds. S. Federaff and A. Richardson, Humana Press 255-264.
- Bottenstein, J.E. (1983) Defined Media For Dissociated Neural Cultures. *In: Current Methods In Cellular Neurobiology* **4**:107-130 (J.L. Barker, ed.), John Wiley and Sons.
- Brewer G.J. and LeRoux P.D. (2007) Human primary brain tumor cell growth inhibition in serum-free medium optimized for neuron survival. *Brain Res.* **1157**:156-66.
- Shin S, Mitalipova M, Noggle S, Tibbitts D, Venable A, Rao R, Stice S.L. (2006) Long-term proliferation of human embryonic stem cell-derived neuroepithelial cells using defined adherent culture conditions. *Stem Cells* **24**:125-38.
- Long X, Olszewski M, Huang W, Kletzel M. (2005) Neural cell differentiation in vitro from adult human bone marrow mesenchymal stem cells. *Stem Cells Dev.* **14**:65-9.
- Pfeiffer S, McLaughlin D. (2010) In vitro differentiation of human amniotic fluid-derived cells: augmentation towards a neuronal dopaminergic phenotype. *Cell Biol Int.* **34**:959-67.
- Bukovsky A. (2009) Sex steroid-mediated reprogramming of vascular smooth muscle cells to stem cells and neurons: possible utilization of sex steroid combinations for regenerative treatment without utilization of in vitro developed stem cells. *Cell Cycle* **8**:4079-84.

For additional technical information such as Safety Data Sheets (SDS), Certificates of Analysis, visit [www.lifetechnologies.com/support](http://www.lifetechnologies.com/support).

For further assistance, email [techsupport@lifetech.com](mailto:techsupport@lifetech.com)

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