

**NCS21 Supplement (50x), Serum-free LTGA05 Hybridoma  
Supplement, Serum-free LTGA06  
ITS (100x), Insulin, Transferrin, Selenium LTGA07 N2  
Supplement (100x), Serum-free LTGA08**

## Supplements

Product	Volume	Cat. No.
NCS21 Supplement (50x), Serum-free	10 ml	LTGA05
Hybridoma Supplement, Serum-free	50 ml	LTGA06
ITS (100x), Insulin, Transferrin, Selenium	10 ml	LTGA07
N2 Supplement (100x), Serum-free	5 ml	LTGA08

## N2 Supplement

Product	Volume	Cat. No.
N2 Supplement (100x), Serum-free	5 ml	LTGA08

N2 Supplement is a serum-free chemically defined supplement based on Bottenstein's N2 formulation. This supplement is recommended for the growth and expression of neuroblastomas and for the survival and expression of post-mitotic neurons in primary cultures from both the peripheral nervous system (PNS) and the central nervous system (CNS). N2 Supplement is provided as a 100x concentrate.

### Applications

N2 Supplement can be used in combination with NCS21 or NCS27 Supplement for:

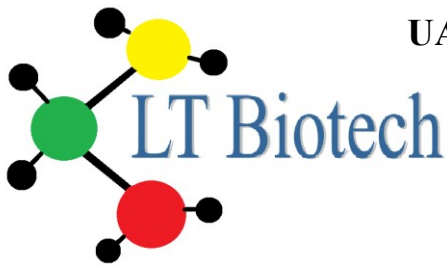
- Differentiation of ES cells into neuron lineage (neuron and astrocytes).
- Differentiation of neural stem cells into astrocytes and neurons.
- Optimal for serum free growth for neuroblastomas.

### Formulation

Component	$\mu\text{g/ml}$
Human Transferrin (holo)	10000.00
Human Recombinant Insulin	500.00
Progesterone	0.63
Putrescine	1611.00
Sodium Selenite	0.52

### Reference

Bottenstein, J. E. (1985) Cell Culture in the Neurosciences, Bottenstein, J. E. and Harvey, A. L., editors, p. 3, Plenum Press: New York and London.



## NCS21 Supplement (50x), Serum-free

Product	Volume	Cat. No.
NCS21 Supplement (50x), Serum-free	10 ml	LTGA05

NCS21 Supplement is a serum-free supplement for neuronal cell cultures. It is an optimized and modified formulation of B27<sup>®</sup> Supplement<sup>1</sup> (B27<sup>®</sup> is a registered trade mark of Life Technologies Corporation).

NCS21 Supplement is suitable for the long-term viability and growth of hippocampal and other neurons of the central nervous (CNS) and peripheral nervous system (PNS). The supplement is a chemically defined 50x concentrate and contains vitamins, hormones and other growth factors including insulin human transferrin, catalase, antioxidants and fatty acids.

### Applications

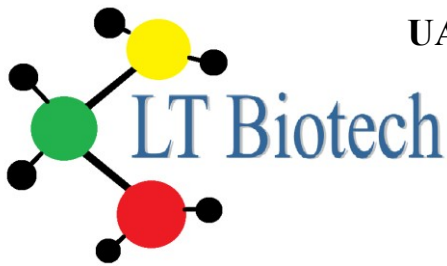
- Differentiation of ES cells into neuron lineage (neuron and astrocytes).
- Differentiation of neuronal stem cells into astrocytes and neurons.
- Optimal growth and long-term survival of rat hippocampal neurons (fetal and adult).
- Survival of neurons from embryonic rat striatum, substantia nigra, septum and cortex, and neonatal rat cerebellum (fetal and adult).

### Composition

L-Carnitine	Retinyl Acetate
Corticosterone	Sodium Selenite
Ethanolamine	T3 (Triodo-I-Thyronine)
D(+)-Galactose	DL- $\alpha$ -Tocopherol
L-Glutathion reduced	DL- $\alpha$ -Tocopherol Acetate
Linoleic Acid	<b>Proteins:</b>
Linolenic Acid	Bovine Serum Albumin
Lipoic Acid	Catalase
Progesterone	Human Recombinant Insulin
Putrescine	Superoxide Dismutase
Retinol	Human Transferrin (holo)

### Reference

Chen *et al.* (2008), *J Neurosci Methods*; 171 (2): 239–247.



## Insulin Transferrin Selenium (ITS)

Product	Volume	Cat. No.
ITS (100x), Insulin, Transferrin, Selenium	10 ml	LTGA07

ITS (Insulin, Transferrin, Selenium) is a chemically defined supplement for a variety of cell culture applications. ITS supplement contains components which are required for optimal performance of serum-free media. Supplementation of ITS to different conventional nutrient media substantially reduces the FBS requirement for routine maintenance of many cell lines. ITS is provided as a 100x concentrate.

### Applications

- Serum-free cultivation.
- Reduction of FBS requirements.
- Cultivation of e.g. CHO, Hybridoma, MDCK and Vero cells.
- Supplement in murine embryonic stem cell culture.

### Formulation

Component	µg/ml
Human Recombinant Insulin	1000.00
Human Transferrin (holo)	550.00
Sodium Selenite	0.68

### Reference

Bottenstein *et al.* (1979), *Methods in Enzymology*; 58: 94–109.

## Hybridoma Supplement

	Volume	Cat. No.
Hybridoma Supplement, Serum-free	50 ml	LTGA06

Hybridoma cells result from fusion of an antibody producing B-cell from the immune system with a tumor cell. To support hybridoma development and achieve an optimal cell density as well as cloning efficiency growth factors and serum (10 to 20 %) are required. Hybridoma Supplement is a chemically defined growth promoting supplement containing insulin, ethanolamine, hydrocortisone, retinoic acid, linoleic acid and other growth promoting factors. As supplement to culture medium it supports the growth of hybridoma in a manner feeder cells have been used before. The disadvantages occurring by the use of feeder cells may include: overgrowth of newly formed hybridomas; source of contamination, competition for nutrients, and variations in growth factor concentrations.

Hybridoma Supplement can be used in culture medium under serum-free conditions. The low protein content facilitates the isolation and purification of produced antibodies. Hybridoma Supplement is provided as a 10x concentrate.

### Applications

- Improvement of Hybridoma Growth after Fusion.
- Improvement of cloning efficiency of hybridomas.
- Production of Monoclonal Antibodies under serum-free conditions.