Chick Embryo Extract (CEE)

Product Description

Chick Embryo Extract (CEE) is a cell culture medium component, used in the supplementation of certain growth media formulations. Save time and money by purchasing a quality-assured product that can be supplied in one of two formulations – lyophilised or frozen liquid.

Applications

Successful *in vitro* cultivation of rat neural crest stem cells (NCSC) and other neural explants requires a specific neural crest stem cell medium (NCSCM). Supplementation with CEE provides a source of essential growth factors.

In addition, CEE has successfully been used in the expansion of many specific stem cell types and has demonstrated the ability to facilitate DNA demethylation. Further examples of how CEE has been used in research applications can be found under 'Literature'.

Preparation

CEE is produced from chick embryos, species Bovans Goldline. Eggs are collected from registered flocks found to be free from clinical signs of notifiable disease. The material is then processed, filtered to 0.2 micron and aseptically filled into bottles. This product is typically prepared with the addition of antibiotics – Penicillin, Streptomycin and Amphoterecin.

Specifications

Country of Origin	UK
Sterility	Tested to be negative for bacteria, yeast and fungi
Growth promotion	Extracts are tested by assaying the growth and the differentiation of mouse muscle cells (cells were derived from H-2K^{b}-tsA58 transgenic mouse, see ref 13 for details)
Filtration	0.2 µm

Product Information

Product Code	**Product Description**	**Pack Size**
MD-004A-UK	Chick Embryo Extract - frozen	500 mL
MD-004D-UK	Chick Embryo Extract - frozen	20 mL
MD-004E-UK	Chick Embryo Extract - lyophilised	10 mL
MD-004B-UF-UK	Chick Embryo Extract - ultrafiltrate	100 mL
MD-004D-UF-UK	Chick Embryo Extract - ultrafiltrate	20 mL

Life Science Production, a Division of Life Science Group Ltd.
Tel: +44 (0) 1234 889180; Email: sales@lifesciencegroup.co.uk
Web: www.lifesciencegroup.co.uk

Batch testing

LSP offer samples of CEE for testing prior to selection of a suitable batch. Typical sample size is 10 mL and reservations are held for a period of four weeks, pending evaluation.

Quality

CEE undergoes stringent Quality Assurance Tested to ensure that the product is negative for bacteria, yeast and fungi. Extracts are tested by assaying the growth and the differentiation of mouse muscle cells. Complete results are reported on the Certificate of Analysis supplied with each batch.

Additional Treatment

CEE is also available as an ultra-filtrate or may be supplied without the addition of antibiotic/antimycotic.

Shelf life

CEE has a shelf-life of 5 years from the date of manufacture.

Storage & Handling

Recommended storage is -20°C or below. Lyophilised product may be stored at +4°C.

Storage and reconstitution of frozen product

Recommended storage is -20°C or below. It is recommended that frozen product be aliquoted into working volumes and frozen for long term storage to avoid multiple freeze/thaw cycles.

Protein precipitate may be observed on thawing. To remove this it is recommended to centrifuge at 3,000g for 10 minutes.

Storage and reconstitution of lyophilised product

Please reconstitute lyophilised product to the original volume of 10 mL using sterile tissue culture grade water. Agitate to mix. If a precipitate appears, continue to agitate under cool conditions for several hours/overnight or sonicate briefly using a sonicating water bath. Centrifuge at 3,000g for 10 minutes and remove pellet.

It is advised that lyophilised product be filtered through a 0.2 micron filter after reconstitution to maintain sterility.

Once reconstituted please store at 4°C for immediate use, or aliquot into working volumes and freeze for long term storage to avoid multiple freeze/thaw cycles.

Formulations

Frozen material is a ready-to-use product. Simply defrost and use. However, the product must be stored as recommended to retain efficacy. Lyophilisation imparts a broader temperature tolerance and longer shelf-life to the product. As a result, lyophilised product can be shipped and stored at 4°C without affecting the products integrity or efficacy until it is reconstituted. Once reconstituted, it must be filtered to retain sterility, and stored appropriately.

Life Science Production, a Division of Life Science Group Ltd.
Tel: +44 (0) 1234 889180; Email: sales@lifesciencegroup.co.uk
Web: www.lifesciencegroup.co.uk

Shipping

Lyophilised product ships on blue ice.

Frozen product ships on dry ice

Literature

1. Beurg, M., *et al.* (1999) Differential Regulation of Skeletal Muscle L-type Ca2+ Current and Excitation-contraction Coupling by the Dihydropyridine Receptor Beta Subunit. *Biophys. J.*, 76(4): 1744-1756.
2. Bultynck, G., *et al.* (2001) Characterization and Mapping of the 12kda Fk506-binding Protein (Fkbp12)-binding Site on Different Isoforms of the Ryanodine Receptor and of the Inositol 1,4,5-trisphosphate Receptor. *Biochem. J.*, 354: 413-422.
3. Christman, S. A., *et al.* (2005) Chicken Embryo Extract Mitigates Growth and Morphological Changes in a Spontaneously Immortalized Chicken Embryo Fibroblast Cell Line. *Poultry Science*, 84(9):1423–1431.
4. Erbay, E. and Chen, J. (2001) The Mammalian Target of Rapamycin Regulates C2C12 Myogenesis via a Kinase- Independent Mechanism. *J. Biol. Chem*., 276(39): 36079-36082.
5. Hagiwara, Y., *et al.* (1981) Chick Embryo Extract, Muscle Trophic Factor and Chick and Horse Sera as Environments for Chick Myogenic Cell Growth. *Develop., Growth and Differ.*, 23(3): 249-254 doi:10.1111/j.1440-169X.1981.00249.x
6. Hennige, A. M., (2008) Fetuin-A Induces Cytokine Expression and Suppresses Adiponectin Production. *PLoS One*, 3(3): e1765 doi: 10.1371/journal.pone.0001765.
7. Jat, P.S., *et al.* (1991) Direct Derivation of Conditionally Immortal Cell Lines from an H-2Kb-Tsa58 Transgenic Mouse. *PNAS*, 88(12): 5096-5100.
8. Kessler, P.D., *et al.* (1996) Gene Delivery to Skeletal Muscle Results in Sustained Expression and Systemic Delivery of a Therapeutic Protein. *PNAS*, 93(24): 14082-14087.
9. Krützfeldt, J., *et al.* (2000) Insulin Signalling and Action in Cultured Skeletal Muscle Cells From Lean Healthy Humans With High and Low Insulin Sensitivity. *Diabetes*, 49(6): 992-998.
10. Lecce, J. G., *et al.* (1953) Chick Embryo Extract, an Enrichment for Certain Strains of Pleuropneumonia Like Organisms Isolated from Man. *J. Bacteriol*., 66(5): 622–623.
11. Kita, K., *et al.* (1998) Influence Of Chicken Embryo Extract On Protein Synthesis Of Chicken Embryo Depends On Cell Density. *AJAS*, 11(6): 713-717.
12. Mann, C.J., *et al.* (2001) Antisense-Induced Exon Skipping and Synthesis of Dystrophin in the Mdx Mouse. *PNAS*, 98(1): 42-47.
13. Morgan, J.E., *et al.* (1994) Myogenic Cell Lines Derived from Transgenic Mice Carrying a Thermolabile T Antigen: A Model System for the Derivation of Tissue-Specific and Mutation-Specific Cell Lines. *Dev Biol.*, 162(2): 486-498.
14. Mu, X., *et al.* (2013) Chick Embryo Extract Demethylates Tumor Suppressor Genes in Osteosarcoma Cells. *Clin Orthop Relat Res*., [Epub ahead of print]
15. Muses, S., *et al.* (2011) A New Extensively Characterised Conditionally Immortal Muscle Cell-Line for Investigating Therapeutic Strategies in Muscular Dystrophies. *PLoS One*, 6(9): e24826 doi: 10.1371/journal.pone.0024826.
16. Pajtler, K., *et al.* (2010) Production of Chick Embryo Extract for the Cultivation of Murine Neural Crest Stem Cells. *J. Vis. Exp*. (45), e2380, doi:10.3791/2380.
17. Slater, C.R. (1976) Control of Myogenesis In Vitro by Chick Embryo Extract. *Dev. Biol.*, 50(2): 264–284.

Life Science Production, a Division of Life Science Group Ltd.
Tel: +44 (0) 1234 889180; Email: sales@lifesciencegroup.co.uk
Web: www.lifesciencegroup.co.uk

18. Stefan, N., *et al.* (2007) Genetic Variations in PPARD and PPARGC1A Determine Mitochondrial Function and Change in Aerobic Physical Fitness and Insulin Sensitivity during Lifestyle Intervention. *J. Clin. Endocrinol. Metab.*, 92(5): 1827– 1833.
19. Suzuki, K., *et al.* (2001) Intracoronary Infusion of Skeletal Myoblasts Improves Cardiac Function in Doxorubicin-Induced Heart Failure. *Circulation*, 18:104 (12 Suppl 1) I213-I217 doi: 10.1161/ hc37t1.094929.
20. Turbow, M. M. (1966) Trypan Blue Induced Teratogenesis of Rat Embryos Cultivated In Vitro. *J. Embryo. Exp. Morphol.* 15(3): 387-395.
21. Weigert, C., *et al.* (2004) Palmitate, but Not Unsaturated Fatty Acids, Induces the Expression of Interleukin-6 in Human Myotubes through Proteasome-dependent Activation of Nuclear Factor-κB. *J. Biol. Chem*., 279(23): 23942–23952.
22. Yablonka-Reuveni, Z. (1995) Myogenesis in the Chicken: The Onset of Differentiation of Adult Myoblasts is Influenced by Tissue Factors. *Basic and Applied Myology*, 5(1):33.
23. Zimmermann, W. H., *et al.* (2002) Tissue Engineering of a Differentiated Cardiac Muscle Construct. *Circ. Res*,. 90(2): 223-230 doi: 10.1161/hh0202.103644.

Support

Life Science Production is a division of Life Science Group Ltd.
Life Science Production is ISIA Traceability Certified
Life Science Group Ltd is an ISO 9001:2015 Certified company

To learn more, contact us:
Telephone: +44 (0) 1234 889180
Email: sales@lifesciencegroup.co.uk
Website: www.lifescienceproduction.co.uk
Address: PO Box 1519, Bedford, United Kingdom