ESGRO® Mouse LIF Medium Supplement

Cell Culture Supplement

Cat. # ESG1107

pack size: 10^7 units

Lot # 3147598

Store at 2-8°C

DO NOT FREEZE

FOR RESEARCH USE ONLY
NOT FOR USE IN DIAGNOSTIC PROCEDURES
NOT FOR HUMAN OR ANIMAL CONSUMPTION

Certificate of Analysis

Description

ESGRO medium supplement is an optimized formulation of mouse Leukemia Inhibitory Factor (LIF), which promotes self-renewal and long-term maintenance of pluripotency of mouse embryonic stem (mES) cells by suppressing spontaneous differentiation. Each lot of ESGRO supplement undergoes stringent quality control testing to ensure consistent inhibition of mES cell differentiation.

Purity and Sterility

The active component mLIF has been shown to be >95% pure by SDS-PAGE. ESGRO supplement is supplied 0.22 micron filtered and tested negative in both aseptic and microplasmic tests. Endotoxin level is less than 0.1 ng per μg of LIF..

Activity

ESGRO supplement is assessed both on mES cells and on murine M1 myeloid leukemic cells. A standard of 50 Units is defined as the concentration of ESGRO supplement in 1.0 mL of tissue culture medium that induces the differentiation of 50% of M1 colonies (Metcalf, 1988).

Embryonic Stem Cell Assay: Differentiation inhibition at 1000 units/mL

Murine myeloid leukemic, M1 Assay: Specific Activity > 10^8 units/mg

Presentation

ESGRO supplement is supplied in liquid form as 10^7 Units in 1.0 mL of phosphate buffered saline, pH 7.4, with 1% w/v bovine serum albumin BSA as a carrier for stability. $1x10^7$ units is sufficient to treat 10.0 L of ES cell culture media.

Appearance

Clear to light yellow solution.

Storage and Handling

ESGRO supplement is shipped on cold packs. Refer to the product vial label for exact expiry information. ESGRO supplement is stable in the concentrated form or diluted in sterile tissue culture media, with no loss of activity on ES cells up to expiration date. For long term storage it is recommended that ESGRO concentrate be stored at 2-8°C. Freeze thawing will reduce potency.

It is recommended that prior to use, ESGRO supplement should be diluted in sterile tissue culture media and aliquoted to a convenient concentration, then stored at 2-8°C. Freeze-thawing should be avoided.

ESGRO supplement is stable for a minimum of 7 days at 37°C, 5% CO_2 incubator during the culture of ES cells.

Warranty

The highest standards of quality control are used in the manufacture of this product. No warranty is provided that the sale or use of the product either alone, in combination with other products, or in the operation of any process, will not infringe patent, intellectual property or any other rights of third parties. This product is supplied for research purposes only. It is not for human therapeutic and/or diagnostic use.

NOTE: ESGRO supplement should not be allowed to come in contact with ruminant animals or swine.

Suggested Protocols

ES Cells:

For routing mouse ES cell culture, 1000 U of ESGRO supplement per 1.0 mL of tissue culture media is sufficient to maintain ES cells with a stem cell phenotype. Similar concentrations of mLIF have also been used for germline transmission of genetically altered ES cells (Ziilstra, 1989).

At the recommended concentration 10^7 units of ESGRO supplement is sufficient for 10.0 L of tissue culture media and 10^6 units of ESGRO supplement is sufficient for 1.0 L of tissue culture media.

References and Suggested Readings:

1. Smith AG., Heath JK., Donaldson DD., et al. “Inhibition of pluripotential embryonic stem cell differentiation by purified polypeptides.” Nature 336:688-90, 1988.
2. Williams RL., Hilton DJ., Pease S., et al. “Myeloid leukemia inhibitory factor maintains the developmental potential of embryonic stem cells. Nature, 336:686-7, 1988.
3. Zijlstra M, Li E, Sajjadi F, Subramani S, Jaenisch R. “Germ-line transmission of a disrupted β2-microglobulin gene produced by homologous recombination in embryonic stem cells.” Nature 342:435-8, 1989.
4. Metcalf D., Hilton DJ., Nicola NA. “Clonal analysis of the actions of the murine leukaemia inhibitory factor on leukemic and normal murine haemopoietic cells. Leukemia 2:216-21, 1988.

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RELATED PRODUCTS

cat #		description
ESG1106	■	ESGRO mLIF Medium Supplement, 10^6 units
SLM-220-B	■	ES Cell Qualified DMEM
ES-009-B	■	ES Cell Qualified FBS
TMS-002-C	■	L-Glutamine
ES-007-E	■	2-mercaptoethanol
ES-008-D	■	Nucleosides
TMS-001-C	■	Non-Essential Amino Acids
TMS-AB2-C	■	Penicillin-Streptomycin
LIF2005	■	Recombinant Mouse Leukemia Inhibitory Factor, 5 μg
LIF2010	■	Recombinant Mouse Leukemia Inhibitory Factor, 10 μg
LIF2050	■	Recombinant Mouse Leukemia Inhibitory Factor, 50 μg

Please visit www.millipore.com for additional product information, test data and references
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