



Product Specification Sheet

Product Name	Stemfactor™ LIF, Human Recombinant
Description	Recombinant Human LIF is a lymphoid factor that promotes long-term maintenance of the pluripotency of embryonic stem cells by suppressing spontaneous differentiation ^{1,2} . Leukemia Inhibitory Factor (LIF) has additional functions such as cholinergic neuron differentiation, bone and fat metabolism, mitogenesis of certain factor dependent cell lines and promotion of megakaryocyte production <i>in vivo</i> ³ . Human LIF is an approximate 20 kDa protein containing 202 amino acid residues and is active on both human and mouse cells.
Catalog Number	03-0016-100
Quantity	1 ml
Concentration	100 µg/ml
Source	<i>E. coli</i>
Purity	Greater than 99% by SDS-PAGE analysis.
Formulation	LIF is supplied as a 0.22 µm sterile filtered liquid in PBS containing 1% w/v BSA as carrier.
Endotoxin Level	Less than 1 EU/µg of LIF as determined by the LAL method.
Biologic Activity	Human LIF activity is assessed by its ability to induce differentiation of M1 myeloid leukemia cells. The specific activity is greater than or equal to 1 x 10 ⁷ units/ml, where 50 units is defined as the amount of human LIF required to induce differentiation in 50% of the M1 colonies in 1 ml of medium.
Storage and Stability	Store LIF at 4°C. Do not freeze. Stable for up to 6 months from date of receipt, when stored as directed.
References	<ol style="list-style-type: none">1. Williams, R.L., Hilton, D.J., Pease, S., Willson, T.A., Stewart, C.L., Gearing, D.P., Wagner, E.F., Metcalf, D., Nicola, N.A., and Gough, N.M. (1988) Myeloid leukemia inhibitory factor maintains the developmental potential of embryonic stem cells. <i>Nature</i> 336: 684-687.2. Gough, N. M., Gearing, D.P., King, J.A., Willson, T.A., Hilton, D.J., Nicola, N.A., and Metcalf, D. (1988) Molecular cloning and expression of the human homologue of the murine gene encoding myeloid leukemia-inhibitory factor. <i>Proc. Natl. Acad. Sci. USA</i> 85: 2623-2627.3. Hanna, J., Cheng, A.W., Saha, K., Kim, J., Lengner, C.J., Soldner, F., Cassady, J.P., Muffat, J., Carey, B.W., and Jaenisch, R. (2010) Human embryonic stem cells with biological and epigenetic characteristics similar to those of mouse ESCs. <i>Proc. Natl. Acad. Sci. USA</i> 107: 9222-9227.

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