



## Product Specification Sheet

<b>Product Name</b>	Stemfactor™ LIF, Human Recombinant
<b>Description</b>	Recombinant Human LIF is a lymphoid factor that promotes long-term maintenance of the pluripotency of embryonic stem cells by suppressing spontaneous differentiation <sup>1,2</sup> . 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> <sup>3</sup> . Human LIF is an approximate 20 kDa protein containing 202 amino acid residues and is active on both human and mouse cells.
<b>Catalog Number</b>	03-0016
<b>Quantity</b>	1 ml
<b>Concentration</b>	10 µg/ml
<b>Source</b>	<i>E. coli</i>
<b>Purity</b>	Greater than 99% by SDS-PAGE analysis.
<b>Formulation</b>	LIF is supplied as a 0.22 µm sterile filtered liquid in PBS containing 1% w/v BSA as carrier.
<b>Endotoxin Level</b>	Less than 1 EU/µg of LIF as determined by the LAL method.
<b>Biologic Activity</b>	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 <sup>6</sup> 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.
<b>Storage and Stability</b>	Store LIF at 4°C. Do not freeze. Stable for up to 6 months from date of receipt, when stored as directed.
<b>References</b>	<ol style="list-style-type: none"><li>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.</li><li>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.</li><li>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.</li></ol>

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