



Product Information

Leukemia Inhibitory Factor soluble Receptor α

Human, Recombinant
Expressed in Sf 21 cells

Product No. **L 0915**

Product Description

Recombinant Human Leukemia Inhibitory Factor soluble Receptor α (LIF sR α) is produced from a DNA sequence encoding amino acids 1-833 of the human LIF R α precursor protein.¹ It is inserted in a baculovirus expression vector and expressed in Sf21 insect cells. Mature recombinant soluble LIF R (789 amino acids), generated by blocking the cleavage of a 44 amino acid signal peptide, has a predicted molecular mass of 100-110 kDa.

Human Leukemia Inhibitory Factor Receptor α is a member of the cytokine receptor family.² It contains a 1097 amino acid precursor type I membrane protein with a 44 amino acid signal peptide, a 789 amino acid extracellular domain, a 26 amino acid transmembrane domain, and a 238 amino acid cytoplasmic domain. The extracellular domain of LIF R α has two cytokine receptor domains and three fibronectin type III repeats.

The biological activities of Leukemia Inhibitory Factor (LIF) are mediated through a high affinity receptor complex consisting of two membrane glycoproteins: an α subunit (LIF R α) and the 130 kDa subunit (gp130). The gp130 subunit was originally described as the signal transducing subunit of the high-affinity IL-6 receptor complex. In addition to LIF, the high-affinity heterodimeric LIF receptor complex mediates the activities of oncostatin M (OSM),³ cardiotrophin-1,⁴ and ciliary neurotrophic factor (CNTF).³ LIF R α binds LIF with low affinity. gp130 does not bind LIF directly but is required for high-affinity binding by the receptor complex. Soluble LIF R α binds LIF and has LIF antagonistic activity.

Reagent

Recombinant Human Leukemia Inhibitory Factor soluble Receptor α is supplied as approximately 50 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline (PBS) containing 2.5 mg bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using 0.2 μ m filtered phosphate buffered saline containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 50 μ g/ml.

Storage/Stability

Store at -20°C . Upon reconstitution, the product may be stored at $2-8^{\circ}\text{C}$ for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a "frost-free" freezer.

Product Profile

Recombinant Human Leukemia Inhibitory Factor soluble Receptor α is measured by its ability to inhibit the LIF dependent proliferation of TF-1 (human hormone-dependent leukemia) cells.⁵

The ED₅₀ for this effect is typically 3 to 6 μ g/ml in the presence of recombinant human LIF (0.3 ng/ml).

The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: > 97 % as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/μg cytokine as determined by the LAL (Limulus ameocyte lysate) method.

References

1. Gearing, D., et al., EMBO J., **10**, 2839 (1991).
2. Bazan, J.F., Proc. Natl. Acad. Sci. USA, **87**, 6934 (1990).
3. Gearing, D.P., et al., Proc. Natl. Acad. Sci. USA, **91**, 1119 (1994).
4. Pennica, D., et al., J. Biol. Chem., **270**, 10915 (1995).
5. Kitamura, T., et al., J. Cell Physiol., **140**, 323 (1989).

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