

**LYMPHOTACTIN (LPTN)**  
Human, Recombinant  
Expressed in *Escherichia coli*

Product Number L 9788

**Product Description**

Recombinant Human Lymphotactin (Lptn) is produced from a DNA sequence encoding the mature human lymphotactin sequence protein.<sup>1</sup> The 94 amino acid methionyl form of mature recombinant human lymphotactin has a predicted molecular mass of approximately 10.4 kDa.

Lymphotactin (Lptn), a member of  $\gamma$  or C subfamily of chemokines, is characterized by having only 2 cysteines. Human lymphotactin encodes a 114 amino acid precursor protein with a 21 amino acid predicted signal peptide. Human lymphotactin (Lptn)/XCL1, also named human SCM-1 and ATAC, and its mouse homologue have been mapped to chromosome 1. Human and mouse lymphotactin share approximately 60% amino acid sequence identity.

The expression of lymphotactin is restricted to activated T cells such as activated CD8+ T cells and other class I MHC restricted T cells. Since lymphotactin is produced by lymphocytes and acts on lymphocytes, it is speculated that it is a messenger in T cell chemoattraction. Human lymphotactin is chemotactic for lymphocytes and NK cells.<sup>2,3</sup> Its expression is absent in CD4+ T cells. It has been shown that lymphotactin is a key regulator of lymphocyte motility and adhesion during acute allograft rejection.<sup>4</sup> The specific receptor for lymphotactin is the orphan receptor GPR5.

**Reagent**

Recombinant Human Lymphotactin (Lptn) is supplied as approximately 25  $\mu$ g of protein lyophilized from a 0.2  $\mu$ m filtered solution in 30% acetonitrile, 0.1% trifluoroacetic acid (TFA) containing 1.25 mg bovine serum albumin.

**Preparation Instructions**

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 25  $\mu$ g/ml.

## Product Information

**Storage/Stability**

Prior to reconstitution, store at -20 °C. Reconstituted product may be stored at 2 °C to 8 °C for at least one month. For prolonged storage, freeze in working aliquots at -20 °C. Avoid repeated freezing and thawing. Do not store in a frost-free freezer.

**Product Profile**

Recombinant Human Lymphotactin (Lptn) is measured by its ability to induce chemotaxis of 3-week IL-2 cultured lymphocytes and also by its ability to induce chemotaxis of mouse BaF/3 cells transfected with hCXCR1.

The ED<sub>50</sub> for chemotaxis of IL-2 cultured lymphocytes is generally 6 to 12  $\mu$ g/ml. The ED<sub>50</sub> for chemotaxis of BaF/3 hCXCR1 cells is generally 0.05 to 0.2  $\mu$ g/ml.

The ED<sub>50</sub> 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: <0.1 ng/ $\mu$ g cytokine as determined by the LAL (Limulus amebocyte lysate) method.

**References**

1. Kennedy, J., et al., Molecular cloning and functional characterization of human lymphotactin. *J. Immunol.*, **155**, 203-209 (1995).
2. Kelner, G.S., et al., Lymphotactin: a cytokine that represents a new class of chemokine. *Science*, **266**, 1395-1399 (1994).
3. Hedrick, J.A., et al., Lymphotactin is produced by NK cells and attracts both NK cells and T cells *in vivo*. *J. Immunol.*, **158**, 1533-1540 (1997).
4. Wang, J.D., et al., Lymphotactin: a key regulator of lymphocyte trafficking during acute graft rejection. *Immunology*, **95**, 56-61 (1998).

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