LEUKOTACTIN-1
Human

Product Number L 7664
Storage Temperature −20 °C

Synonyms: Macrophage Inflammatory Protein 1δ, MIP-1δ, Lkn-1, MIP-5, HCC-2, NCC-3

Product Description
Human leukotactin 1 is a synthetic protein composed of 92 amino acid residues with a calculated molecular mass of 10,162 Da.

Chemokines comprise a group of small, structurally-related molecules that are chemoattractants for leukocytes. As such, they regulate cell trafficking of leukocytes and the development, homeostasis, and function of the immune system. Chemokines are expressed in many cell types, including cells of the central nervous system, bone marrow, major organs, endothelial linings, as well as in many transformed cell lines.

Chemokines are divided into two major subfamilies based on the arrangement of the first two conserved cysteines. In the CC (β) subfamily these cysteines are adjacent to each other; and in the CXC (α) subfamily the first two cysteines are separated by a single amino acid. CXC chemokines are further subdivided into ELR and non-ELR types based on the presence or absence of a glu-leu-arg sequence preceding the CXC motif in the amino terminal region. ELR-containing chemokines are chemotaxic for neutrophils. Most mature chemokines consist of approximately 70 amino acid residues and have internal disulfide bonds. All known α chemokines share 25-90% sequence homology and have three intron structure. Their genes cluster on human chromosome 4q12-q21. All known β chemokines share 25-70% sequence homology and have a four exons, three intron structure. Their genes cluster on human chromosome 17.

Leukotactin-1 is a member of the β (CC) chemokine family of inflammatory and immunoregulatory cytokines. The leukotactin-1 gene was mapped to human chromosome 17 in close proximity to other β-chemokine genes such as RANTES, MCP-1, and MCP-3. Leukotactin-1 belongs to a subgroup of chemokines that have six rather than four conserved cysteine residues.

Leukotactin-1 is a potent chemoattractant for neutrophils, monocytes, and T-lymphocytes. It is a potent agonist at the CC chemokine receptors 1 and 3 (CCR1 and CCR3). Leukotactin 1-induced calcium flux in CCR1-expressing cells appears to be related to its chemotactic activity. It suppresses colony formation of human granulocyte-macrophage, erythroid, and multipotential progenitor cells stimulated by combinations of growth factors.

Reagents
Leukotactin-1 is supplied as a lyophilized powder.

Preparation Instructions
Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing 0.1% human or bovine serum albumin. Prepare a stock solution of no less than 20 µg/ml. Vortex thoroughly.

Storage/Stability
Leukotactin 1 is stable for at least 12 months when stored at −20 °C. The stock solution should be stored at −20 °C in single-use aliquots. Avoid repeated freeze-thaw cycles to prevent denaturing of the protein. Do not store in a frost-free freezer.

Product Profile
The activity of synthetic human leukotactin-1 is measured by its ability to chemoattract THP-1 cells. The ED_{50} for this effect generally ranges from 2 to 4 ng/ml.

Note: In order to obtain the best results using different techniques and preparations we recommend determining the optimal working concentration by titration.

References

AH/LY 1/02