ProductInformation

INTERLEUKIN 16 (IL-16)
Human, Recombinant
Expressed in *E. coli*

Product Number **I 1903**

Product Description

Interleukin 16 (IL-16) is produced from a DNA sequence encoding the putative 130 amino acid residue IL-16 monomer.[1] This methionyl form of recombinant IL-16 has a predicted molecular mass of approximately 14 kDa. The sequence and structure of IL-16 is conserved across species. Structurally and functionally, particularly in the C-terminal region, human and mouse IL-16 share approximately 82 % similarity.[2]

Interleukin 16 (IL-16), also known as lymphocyte chemoattractant factor (LCF), [3] is a proinflammatory cytokine that is chemotactic for CD4+ T lymphocytes, monocytes, and eosinophils. It was originally identified as a CD8+ T-cell-derived chemoattractant for CD4+ cells. The biologically active form of IL-16, originally proposed to be a homotetramer of 14 kDa chains with 130 amino acid residues, [1] is now believed to have been derived from the C terminus of the precursor molecule. Subsequently, IL-16 is synthesized as a precursor molecule (pro-IL-16) of approximately 68 kDa and 631 amino acid residues lacking a signal peptide.[4, 5]

In addition to inducing chemotaxis, IL-16 upregulates the IL-2 receptor [3] and also upregulates HLA-DR [6] expression. It also inhibits T cell receptor (TCR)/CD3-dependent activation, [7] and suppresses HIV-1 replication *in vitro*.[8] IL-16 expression has been linked to inflammatory processes in various diseases and conditions. CD4 functions as a signal-transducing receptor for IL-16. The expression of CD4 is necessary for mediating IL-16 functions.[3, 9]

Sources of IL-16 include epithelial cells, mast cells, T lymphocytes (CD4+ and CD8+), macrophages, synovial fibroblasts, and eosinophils. IL-16 precursor proteins have been detected in the lysates of various cells including mitogen-stimulated PBMCs (peripheral blood mononuclear cells) and also in tissues such as spleen, thymus, lymph nodes, bone marrow, and cerebellum. The gene for IL-16 maps to chromosome 15 in humans.[10]

Reagent

Recombinant human IL-16 is supplied as approximately 2 µg of protein lyophilized from a 0.2 µm filtered solution in phosphate buffered saline (PBS) containing 0.1 mg of bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 5 µg/ml.

Storage/Stability

Store at –20 °C. Upon reconstitution, store at 2 °C to 8 °C for 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

Interleukin 16 is measured by its ability to chemoattract human lymphocytes cultured in the presence of IL-2 for 8 to 10 days.[11]

The ED_{50} for this effect is generally 2 µg/ml to 10 µg/ml.

The ED_{50} 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 protein as determined by the LAL (Limulus amebocyte lysate) method.

Note: This product exists mainly as a monomer, exhibiting chemotactic activity for lymphocytes at high concentrations, lacks chemotactic activities for monocytes, and binds the extracellular domain of CD4 with low affinity.

References

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