Product Information Sheet

Interleukin-18 from rat

recombinant, expressed in E. coli

I0531

Storage Temperature −20 °C

Product Description

Interleukin-18 (IL-18) shares some biological activities with IL-12 and structural similarities with the IL-1 family. Structurally, IL-18 and IL-1β share primary amino acids sequences (signature sequence motif) and are similarly folded as all-β pleated sheet molecules. Similar to IL-1β, production of IL-18 requires caspase-1 (interleukin-1β converting enzyme, ICE) to cleave the pro-domain from the precursor protein to produce active mature IL-18.

The primary immune actions of IL-18 appear to be through the induction of high levels of IFN-γ production. In the T cell helper type 1 (Th1) response, IL-18 induces IFN-γ production in T cells and NK cells. Gene expression and synthesis of TNF, IL-1, Fas ligand, and several chemokines are induced by IL-18. IL-18 selectively enhances the FasL-mediated cytotoxicity of Th1, but not Th0 or Th2 cells. IL-18 induces activated B cells to produce IFN-γ that inhibits IgE production. It is also plays a key role in immunoregulation and participates in both innate and acquired immunity.

IL-18 has been detected in keratinocytes, small intestine epithelial cells, adrenal cells, macrophages, pancreas, skeletal muscle, liver, lung, and PBMCs (peripheral blood mononuclear cells). IL-18 actions are mediated by an IL-18 receptor (IL-18 R) complex comprised of a binding chain (IL-18 Rα, also called IL-1 receptor-related protein, IL-1 Rrp) and a signal-transducing chain.

This recombinant Rat Interleukin-18 (IL-18) product is produced from a DNA sequence encoding the mature rat IL-18 protein. It is supplied lyophilized from a 0.2 µm filtered solution of 20 mM MOPS, 50 mM sodium sulfate, 0.5 mM EDTA, and 0.5 mM DTT, pH 7.2, containing 50 µg bovine serum albumin per 1 µg of cytokine with 5% trehalose.

The methionyl form of recombinant rat IL-18, a 159 amino acid protein, has a predicted molecular mass of ~18.4 kDa.

Purity

> 97% (SDS-PAGE)

ED_{50}: typically 10–60 ng/mL

Biological activity is measured by the ability to induce mouse IFN-γ production by activated mouse T cells. 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.

Endotoxin level

<0.1 EU/µg of the cytokine

(LAL [Limulus amebocyte lysate] method)

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and storage at –20 °C is recommended. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

References

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