

Recombinant Rat Interleukin-18

Certificate of Analysis and Data Sheet

➤ Source: E.Coli	➤ Catalog No. CTK-376
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➤ **Background:**

Interleukin-18 is a member of the interleukin-1 family of cytokines with pro-inflammatory and tumor-suppressive properties. Its ability to potently enhance the production of interferon-gamma indicates in particular the crucial function of interleukin-18 as an immunomodulatory molecule. In fact, high levels of interleukin-18 are detected in human diseases associated with immunoactivation including viral or bacterial infections and chronic inflammation. Animal models suggest suppression of interleukin-18 bioactivity as a novel therapeutic concept specifically for the treatment of chronic inflammatory diseases such as rheumatoid arthritis, Crohn's disease, and psoriasis. It is the only cytokine with a unique capacity to induce T helper 1 or T helper 2 polarization, depending on the immunologic context.

➤ **Description :**

Recombinant Rat IL-18 produced in E.Coli is a single, non-glycosylated polypeptide chain containing 158 amino acids and having a molecular mass of 18260 Dalton.

Recombinant Rat Interleukin-18 is purified by proprietary chromatographic techniques.

➤ **Physical Appearance:**

Sterile Filtered White lyophilized (freeze-dried) powder.

➤ **Formulation:**

Lyophilized from a concentrated (1mg/ml) solution in water containing 0.4 x PBS pH=7.2.

➤ **Solubility:**

It is recommended to reconstitute the lyophilized IL-18 in sterile 18MΩ-cm H₂O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

➤ **Stability:**

Lyophilized Interleukin-18 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution IL-18 should be stored at 4°C between 2-7 days and for future use below -18°C. For long-term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Please avoid freeze-thaw cycles.

➤ **Purity:**

Greater than 95.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

(c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

➤ **Amino acid sequence:**

The sequence of the first five N-terminal amino acids was determined and was found to be His-Phe-Gly-Arg-Leu.

➤ **Dimers and aggregates:**

Less than 1% as determined by silver-stained SDS-PAGE gel analysis.

➤ **Biological activity:**

This Rat IL-18 is fully biologically active when compared to standard. The ED50 as determined by the dose-dependent stimulation of IFN-gamma by murine lymph node cells (4×10^5 cells/well) co-stimulated with sub optimal dose of ConA (0.75ug/ml) is 12 ng/ml. The medium was RPMI containing 10% FCS and 50µM 2-ME.

➤ **Protein content:**

Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 0.213 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).

2. Analysis by RP-HPLC, using a standard solution of IL-18 as a Reference Standard.

➤ **Endotoxin:**

Less than 0.1 ng/µg (IEU/µg) of rat IL-18.

➤ **Usage:**

This material is offered for research, laboratory or further manufacturing purposes.

