

# Recombinant Rat Interleukin-1 beta

## Certificate of Analysis and Data Sheet

➤ <b>Source:</b> E.Coli	➤ <b>Catalog No.</b> CTK-394
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### ➤ **Background:**

A soluble factor produced by monocytes, macrophages, and other cells, which activates T-lymphocytes and potentiates their response to mitogens or antigens. IL-1 consists of two distinct forms, IL-1 alpha and IL-1 beta which perform the same functions but are distinct proteins.

The synthesis of IL-1 can be induced by other cytokines including TNF-alpha , IFN-alpha , IFN-beta and IFN-g and also by bacterial endotoxins , viruses, mitogens, and antigens. In human skin fibroblasts IL-1 alpha and TNF-alpha induce the synthesis of IL-1beta . In pheochromocytoma cells, NGF induces the synthesis of IL-1.

### ➤ **Description :**

Recombinant Rat Interleukin-1 beta produced in E.Coli is a non-glycosylated, Polypeptide chain containing 153 amino acids and having a molecular mass of 17415.82 Dalton.

The Recombinant Rat IL-1b is purified by proprietary chromatographic techniques.

### ➤ **Physical Appearance:**

Sterile Filtered White lyophilized (freeze-dried) powder.

### ➤ **Formulation:**

The protein was lyophilized from a concentrated (1mg/ml) sterile solution containing 10mM sodium citrate pH=6.5.

### ➤ **Solubility:**

It is recommended to reconstitute the lyophilized Rat Interleukin-1b in sterile 18MΩ-cm H<sub>2</sub>O not less than 100μg/ml, which can then be further diluted to other aqueous solutions.

➤ **Stability:**

Lyophilized Rat IL-1 beta although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution IL-1 beta 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 98.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Anion-exchange FPLC.

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

➤ **Amino-Acid Sequence :**

The sequence of the first five N-terminal amino acids was determined and was found to be Met-Val-Pro-Ile-Arg.

➤ **Dimers and aggregates:**

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

➤ **Biological Activity:**

The ED50 as determined by the dose-dependent stimulation of murine D10S cells is < 0.1 ng/ml, corresponding to a Specific Activity of  $1 \times 10^7$  IU/mg.

➤ **Endotoxin:**

Less than 0.1 ng/μg (IEU/μg) of Recombinant Rat Interleukin-1 beta.

➤ **Protein content:**

Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 0.558 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 Rat IL-1b as a Reference Standard.

➤ **Usage:**

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