

# Recombinant Mouse Interleukin-1 Beta

## Mouse, Recombinant (Il1b)

Expressed in *E. coli*

Cat. No. CRP0832

Lot. No. (See product label)

### PRODUCT INFORMATION

**Description:** IL-1 is a name that designates two proteins, IL-1 $\alpha$  and IL-1 $\beta$ , that are the products of distinct genes, but recognize the same cell surface receptors. IL-1 $\alpha$  and IL-1 $\beta$  are structurally related polypeptides that show approximately 25% homology at the amino acid level. Both proteins are produced by a wide variety of cells in response to stimuli such as those produced by inflammatory agents, infections, or microbial endotoxins. The proteins are synthesized as 31 kDa precursors that are subsequently cleaved into proteins with molecular weights of approximately 17.5 kDa. The specific protease responsible for the processing of IL-1 $\beta$ , designated interleukin 1 $\beta$ -converting enzyme (ICE), has been described. Mature human and mouse IL-1 $\beta$  share approximately 75% amino acid sequence identity and human IL-1 $\beta$  has been found to be active on murine cell lines.

**Amino-Acid Sequence:** 152aa (The sequence of the first five N-terminal amino acids was determined and was found to be Ser-Ala-Pro-Tyr-Thr.), non-glycosylated.

**M. W. :** 17,400 Da

**Recombinant:** Expressed in *E. coli*

**Purity:** >98% as determined by RP-HPLC, FPLC and SDS-PAGE.

**Formulation:** Mouse IL-1 $\beta$  was lyophilized after extensive dialysis against PBS.

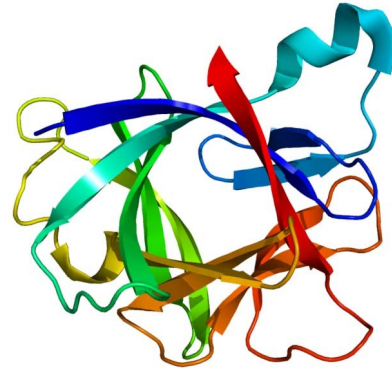
**Specific Activity:** The ED50 as determined by the dose-dependant stimulation of mouse D10S cells was found to be less than 0.01 ng/ml, corresponding to a Specific Activity of  $1.0 \times 10^8$  IU/mg.

**Endotoxin:** Less than 0.1 ng/ $\mu$ g (1 IEU/ $\mu$ g) of IL-1 $\alpha$ .

**Reconstitution:** It is recommended to reconstitute the lyophilized rmlL-1 $\beta$  in sterile 18M $\Omega$ -cm H<sub>2</sub>O not less than 100 $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

**Storage:** Lyophilized rmlL-1 $\beta$  although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rmlL-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). Aliquot to avoid repeated freeze-thaw cycles.

### FOR RESEARCH USE ONLY



Crystal structure of IL-1b ([PDB 31BI](#))

### GENE INFORMATION

**Gene Name:** [IL1B](#)

**Synonyms:** RP23-384K11.2; IL-1beta; Il-1b; Catabolin; IL-1; Lymphocyte-activating factor; LAF; Endogenous Pyrogen; EP; Leukocyte Endogenous Mediator; LEM; Mononuclear Cell Factor; MCF; IL1F2; Interleukin-1 beta; pro-interleukin-1-beta; Interleukin-1 beta precursor; preinterleukin 1 beta; Il1b; interleukin 1 beta

**mRNA Refseq:** [NM\\_008361.3](#)

**Protein Refseq:** [NP\\_032387.1](#)

**MIM:** [147720](#)

**GeneID:** [16176](#)

**UniProt ID:** P10749

**Chromosome Location:** 2 73.0 cM

**Pathway:** Apoptosis; Cytokine-cytokine receptor interaction; Hematopoietic cell lineage; MAPK signaling pathway; Toll-like receptor signaling pathway; Type I diabetes mellitus

**Function:** cytokine activity; growth factor activity; interleukin -1 receptor binding

### REFERENCES

1. Huising MO, Stet RJ, et al. The molecular evolution of the interleukin-1 family of cytokines; IL-18 in teleost fish. *Dev. Comp. Immunol.* 2004; 28 (5): 395–413
2. Sims JE, Nicklin MJ, et al. A new nomenclature for IL-1-family genes. *Trends Immunol.* 2001; 22 (10): 536–537
3. Dunn E, Sims JE, et al. Annotating genes with potential roles in the immune system: six new members of the IL-1 family. *Trends Immunol.* 2001; 22 (10): 533–536