

**IL-1 $\beta$**   
**Catalog # PVGS1229****Specification**

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**IL-1 $\beta$  - Product Information**

Primary Accession [P10749](#)  
**Species**  
Mouse

**Sequence**  
Val118-Ser269

**Purity**  
> 95% as analyzed by SDS-PAGE  
> 95% as analyzed by HPLC

**Endotoxin Level**  
< 0.2 EU/  $\mu$ g of protein by gel clotting method

**Biological Activity**  
ED<sub>50</sub> < 10.0 pg/ml, measured in a cell proliferation assay using D10S cells, corresponding to a specific activity of  $> 1.0 \times 10^8$  units/mg.

**Expression System**  
CHO

Formulation **Lyophilized after extensive dialysis against PBS.**

**Reconstitution**  
It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in ddH<sub>2</sub>O or PBS up to 100  $\mu$ g/ml.

**Storage & Stability**  
Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

**IL-1 $\beta$  - Additional Information**

**Gene ID** 16176

**Other Names**  
Interleukin-1 beta, IL-1 beta, IL1b

**Target Background**  
Interleukin-1 (IL-1) is a family of cytokines that play a central role in the regulation of immune and inflammatory responses to infections or sterile insults. IL-1 $\alpha$  and IL-1 $\beta$  are the first two members discovered in this family, which are the products of distinct genes recognizing 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 $\beta$  is interleukin 1 $\beta$ -converting enzyme (ICE)/caspase-1. Mature human and mouse IL-1 $\beta$  share approximately 75% amino acid sequence identity where human IL-1 $\beta$  has been found to be active on murine cell lines.

## **IL-1 $\beta$ - Protein Information**

**Name** Il1b

### **Function**

Potent pro-inflammatory cytokine. Initially discovered as the major endogenous pyrogen, induces prostaglandin synthesis, neutrophil influx and activation, T-cell activation and cytokine production, B- cell activation and antibody production, and fibroblast proliferation and collagen production. Promotes Th17 differentiation of T-cells. Synergizes with IL12/interleukin-12 to induce IFNG synthesis from T- helper 1 (Th1) cells. Plays a role in angiogenesis by inducing VEGF production synergistically with TNF and IL6. Involved in transduction of inflammation downstream of pyroptosis: its mature form is specifically released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore.

### **Cellular Location**

Cytoplasm, cytosol. Secreted Lysosome {ECO:0000250|UniProtKB:P01584}. Secreted, extracellular exosome. Note=The precursor is cytosolic In response to inflammasome-activating signals, such as ATP for NLRP3 inflammasome or bacterial flagellin for NLRC4 inflammasome, cleaved and secreted. Mature form is secreted and released in the extracellular milieu by passing through the gasdermin-D (GSDMD) pore. In contrast, the precursor form is not released, due to the presence of an acidic region that is proteolytically removed by CASP1 during maturation. The secretion is dependent on protein unfolding and facilitated by the cargo receptor TMED10. {ECO:0000250|UniProtKB:P01584}

### **Tissue Location**

Expressed in activated macrophages (at protein level).

## **IL-1 $\beta$ - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## **IL-1 $\beta$ - Images**