

# Recombinant Human IL-1 beta Protein

Catalog No.: RP00002 **Recombinant**

## Sequence Information

Species	Gene ID	Swiss Prot
Human	3553	P01584

### Tags

C-His

### Synonyms

IL-1;IL1-BETA;IL1F2;IL1 beta;IL1B

## Product Information

Source	Purification
<i>E. coli</i>	> 95% by SDS-PAGE.

### Endotoxin

&lt; 0.1 EU/μg of the protein by LAL method.

### Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4. Contact us for customized product form or formulation.

### Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

## Contact

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## Background

Interleukin-1 beta (IL1 beta or IL1B) also known as catabolin, is a member of the interleukin 1 cytokine family. This cytokine is produced by activated macrophages as a proprotein, which is proteolytically processed to its active form by caspase 1 (CASP1/ICE). This cytokine is an important mediator of the inflammatory response, and is involved in a variety of cellular activities, including cell proliferation, differentiation, and apoptosis. The induction of cyclooxygenase-2 (PTGS2/COX2) by this cytokine in the central nervous system (CNS) is found to contribute to inflammatory pain hypersensitivity.

## Basic Information

### Description

Recombinant Human IL-1 beta Protein is produced by *E. coli* expression system. The target protein is expressed with sequence (Ala117-Ser269) of human IL-1 beta (Accession #NP\_000567.1) fused with an initial Met at the N-terminus and a 6×His tag at the C-terminus.

### Bio-Activity

1. Recombinant Human IL1β protein was measured by NF-κB reporter assay in HEK293 cells. The ED<sub>50</sub> for this effect is 1-10 pg/mL, corresponding to a specific activity of 1×10<sup>8</sup>~1×10<sup>9</sup> units/mg. | 2. Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells. The ED<sub>50</sub> for this effect is 0.217-0.870 ng/mL, corresponding to a specific activity of 1.15×10<sup>6</sup>~4.61×10<sup>6</sup> units/mg. | 3. Measured by its binding ability in a functional ELISA. Immobilized Human IL-1 beta (Catalog: RP00002) at 10 μg/mL (100 μL/well) can bind Biotinylated Human IL-1R1 (Catalog: RP01036) with a linear range of 0.002-1 μg/mL.

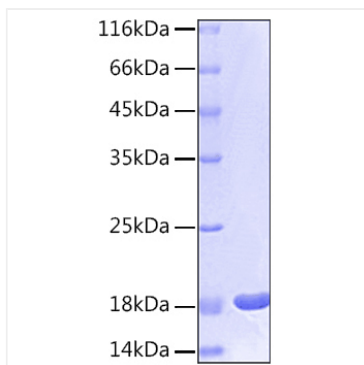
### Storage

Store the lyophilized protein at -20°C to -80 °C for long term.

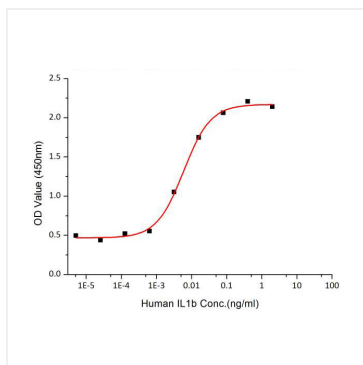
After reconstitution, the protein solution is stable at -20 °C for 3 months, at 2-8 °C for up to 1 week.

Avoid repeated freeze/thaw cycles.

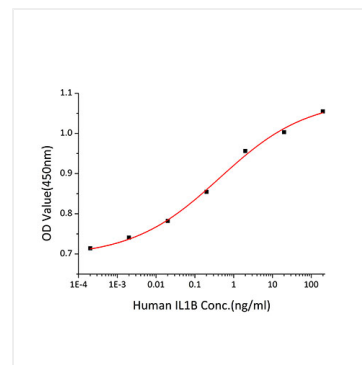
## Validation Data



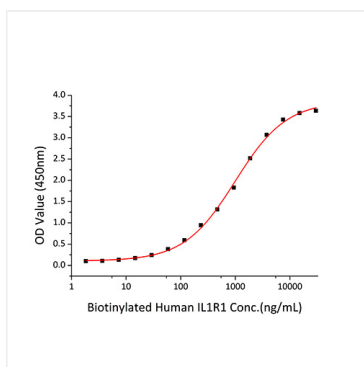
Recombinant Human IL-1 beta Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 18 kDa.



Recombinant Human IL1 $\beta$  protein was measured by NF- $\kappa$ B reporter assay in HEK293 cells. The ED<sub>50</sub> for this effect is 1-10 pg/mL, corresponding to a specific activity of  $1 \times 10^5 \sim 1 \times 10^9$  units/mg.



Recombinant Human IL-1 beta promotes the proliferation of D10.G4.1 mouse helper T cells. The ED<sub>50</sub> for this effect is 0.217-0.870 ng/mL, corresponding to a specific activity of  $1.15 \times 10^5 \sim 4.60 \times 10^6$  units/mg.



Immobilized Human IL-1 beta (Catalog: RP00002) at 10  $\mu$ g/mL (100  $\mu$ L/well) can bind Biotinylated Human IL-1R1 (Catalog: RP01036) with a linear range of 0.002-1  $\mu$ g/mL.