

# Recombinant human IL-1 $\beta$ (*E. coli*)

*E. coli* expressed human interleukin 1 beta (IL-1 $\beta$ )

Cat. code: rcyec-hil1b, rcyec-hil1b-5

<https://www.invivogen.com/human-il1b>

For research use only

Version 25A10-MM

## PRODUCT INFORMATION

### Contents

Recombinant human IL-1 $\beta$  (*E. coli*) is provided as a lyophilized powder and is available in two quantities:

- **rcyec-hil1b:** 10  $\mu$ g
- **rcyec-hil1b-5:** 50  $\mu$ g (5 x 10  $\mu$ g)

*Note:* This product is sterile filtered prior to lyophilization.

- 1.5 ml endotoxin-free water for rcyec-hil1b and rcyec-hil1b-5

### Storage and stability

- Recombinant human IL-1 $\beta$  (*E. coli*) is shipped at room temperature. Upon receipt it should be immediately stored at -20  $^{\circ}$ C.
- Upon resuspension, prepare aliquots of recombinant human IL-1 $\beta$  (*E. coli*) and store at 4 $^{\circ}$ C for 1 week or at -20 $^{\circ}$ C to -80 $^{\circ}$ C for 12 months.

*Note:* Avoid repeated freeze-thaw cycles.

### Quality control

- Purity:  $\geq$  95% (SDS-PAGE)
- Endotoxin level:  $\leq$  0.1 EU/ $\mu$ g (LAL assay)
- The biological activity has been confirmed using [HEK-Blue™ IL-1 \$\beta\$  cells](#) (see validation data sheet available on our website).

### Characteristics

- Alternative name: IL1F2, interleukin 1 beta
- Source: Bacterial; *Escherichia coli* (*E. coli*)
- Molecular mass: ~17.3 kDa (SDS PAGE)
- Carrier: Human serum albumin (HSA)
- UniProt ID: P01584
- Protein sequence: Ala117-Ser269
- Mature, active form of IL-1 $\beta$
- Formulation: Recombinant human IL-1 $\beta$  (*E. coli*) was lyophilized from a 0.2  $\mu$ m filtered 20 mM Sodium Phosphate, 150 mM NaCl, and 5% saccharose buffer solution (pH 7.4) containing HSA.
- Solubility: 100  $\mu$ g/ml in water

## APPLICATIONS

- Cellular assays
- Cell culture
- ELISA

## PRODUCT DESCRIPTION

Interleukin 1 beta (IL-1 $\beta$ ) is a secreted pro-inflammatory cytokine that participates in the generation of systemic and local responses to infection and injury<sup>1,2</sup>. IL-1 $\beta$  derives from a proprotein that is produced by activated macrophages and cleaved by caspase<sup>13</sup>. The resulting mature IL-1 $\beta$  is secreted and binds to the IL-1RI receptor inducing MyD88-mediated intracellular signaling. Subsequently, this leads to the activation of the transcription factor NK- $\kappa$ B and the production of inflammatory cytokines, such as IL-6 and IL-8<sup>4</sup>.

InvivoGen's recombinant human IL-1 $\beta$  is intended for use in cell culture applications. It is produced in *Escherichia coli* (*E. coli*).

1. Dinarello C., 2009. Immunological and inflammatory functions of the interleukin-1 family. *Annu. Rev. Immunol.* 27:519-550. 2. Sims J. & Smith D., 2010. The IL-1 family: regulators of immunity. *Nat Rev Immunol.* 10(2):89-102. 3. O'Neill L., 2008. The interleukin-1 receptor/Toll-like receptor superfamily: 10 years of progress. *Immunol. Rev.* 226, 10-18. 4. Weber A. et al., 2010. Interleukin-1 (IL-1) pathway. *Sci Signal.* 3(105):cm1.

## METHODS

### Preparation of stock solution (100 $\mu$ g/ml):

1. Add 100  $\mu$ l endotoxin-free water (provided) to 10  $\mu$ g of recombinant hIL-1 $\beta$  (*E. coli*) and mix gently by pipetting until completely resuspended.
2. Use immediately or prepare aliquots and store at 4 $^{\circ}$ C for 1 week or at -20 $^{\circ}$ C to -80 $^{\circ}$ C for 12 month. Avoid freeze-thaw cycles.
3. Further dilutions can be prepared in the appropriate aqueous buffer, such as cell culture medium containing serum.

## RELATED PRODUCTS

Product	Cat. Code
Recombinant human IL-1 $\beta$ (CHO)	rcyc-hil1b
HEK-Blue™ IL-1 $\beta$ cells	hkb-il1bv2
Anti-human IL-1 $\beta$ mlgG1	mabg-hil1b-3

## TECHNICAL SUPPORT

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