

## DESCRIPTION

**Source** *E. coli*-derived  
Ala117-Ser268  
Accession # NP\_001075670

**N-terminal Sequence Analysis** Ala117

**Predicted Molecular Mass** 17.5 kDa

## SPECIFICATIONS

**SDS-PAGE** 19 kDa, reducing conditions

**Activity** Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells. Symons, J.A. *et al.* (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 272.  
The ED<sub>50</sub> for this effect is 3-18 pg/mL.

**Endotoxin Level** <0.10 EU per 1  $\mu$ g of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2  $\mu$ m filtered solution in MES, NaCl, DTT and EDTA with BSA as a carrier protein. See Certificate of Analysis for details.

## PREPARATION AND STORAGE

**Reconstitution** Reconstitute at 100  $\mu$ g/mL in sterile, deionized water.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

## BACKGROUND

IL-1 is a name that designates two pleiotropic cytokines, IL-1 $\alpha$  (IL-1F1) and IL-1 $\beta$  (IL-1F2), which are the products of distinct genes. IL-1 $\alpha$  and IL-1 $\beta$  are structurally related polypeptides that share approximately 25% amino acid (aa) identity in rabbit. Both proteins are produced by a wide variety of cells in response to inflammatory agents, infections, or microbial endotoxins. While IL-1 $\alpha$  and IL-1 $\beta$  are regulated independently, they bind to the same receptor and exert identical biological effects. IL-1 RI binds directly to IL-1 $\alpha$  or IL-1 $\beta$  and then associates with IL-1 R accessory protein (IL-1 R3/IL-1 RAcP) to form a high-affinity receptor complex that is competent for signal transduction. IL-1 RII has high affinity for IL-1 $\beta$  but functions as a decoy receptor and negative regulator of IL-1 $\beta$  activity. IL-1ra functions as a competitive antagonist by preventing IL-1 $\alpha$  and IL-1 $\beta$  from interacting with IL-1 RI (1-3). The rabbit IL-1 $\beta$  cDNA encodes a 268 aa precursor. A 116 aa propeptide is cleaved intracellularly by the cysteine protease IL-1 $\beta$ -converting enzyme (Caspase-1/ICE) to generate the active cytokine (4, 5). The 17 kDa mature rabbit IL-1 $\beta$  shares 78%-81% aa sequence identity with human, mouse, and rat and 64%-72% with bovine, equine, feline, goat, human, ovine, and porcine IL-1 $\beta$ .

## References:

1. Dinarello, C.A. (2009) Annu. Rev. Immunol. **27**:519.
2. Boraschi, D. and A. Tagliabue (2006) Vitam. Horm. **74**:229.
3. Weber, A. *et al.* (2010) Sci. Signal. **3**:cm1.
4. Cannon, J.G. *et al.* (1989) J. Immunol. **142**:2299.
5. Martinon, F. and J. Tschopp (2007) Cell Death Differ. **14**:10.