

DESCRIPTION

Source *E. coli*-derived porcine IL-1 beta/IL-1F2 protein
Ala115-Pro267
Accession # P26889.1

N-terminal Sequence Analysis Ala115

Predicted Molecular Mass 18 kDa

SPECIFICATIONS

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 ED₅₀ for this effect is 0.75-4.5 ng/mL.

Endotoxin Level <1.0 EU per 1 μ 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 μ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

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

Stability & Storage

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

BACKGROUND

IL-1 is a name that designates two pleiotropic cytokines, IL-1 α (IL-1F1) and IL-1 β (IL-1F2), which are the products of distinct genes. IL-1 α and IL-1 β are structurally related polypeptides that share approximately 27% amino acid (aa) identity in porcine. Both proteins are produced by a wide variety of cells in response to inflammatory agents, infections, or microbial endotoxins. While IL-1 α and IL-1 β are regulated independently, they bind to the same receptor and exert identical biological effects. IL-1 RI binds directly to IL-1 α or IL-1 β and then associates with IL-1 R accessory protein (IL-1 R3/IL-1 R AcP) to form a high-affinity receptor complex that is competent for signal transduction. IL-1 RII has high affinity for IL-1 β but functions as a decoy receptor and negative regulator of IL-1 β activity. IL-1ra functions as a competitive antagonist by preventing IL-1 α and IL-1 β from interacting with IL-1 RI (1 - 4). The porcine IL-1 β cDNA encodes a 267 aa precursor. A 114 aa propeptide is cleaved intracellularly by the cysteine protease IL-1 β -converting enzyme (Caspase-1/ICE) to generate the active cytokine (5, 6). The 17 kDa mature porcine IL-1 β shares 63%-70% aa sequence identity with canine, cotton rat, equine, feline, human, mouse, rat, and rhesus IL-1 β .

References:

1. Allan, S.M. *et al.* (2005) *Nat. Rev. Immunol.* **5**:629.
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3. Kornman, K.S. (2006) *Am. J. Clin. Nutr.* **83**:475S.
4. Isoda, K. and F. Ohsuzu (2006) *J. Atheroscler. Thromb.* **13**:21.
5. Huether, M. *et al.* (1993) *Gene* **129**:285.
6. Martinon, F. and J. Tschopp (2007) *Cell Death Differ.* **14**:10.