# biotechne

## Recombinant Mouse IL-1β/IL-1F2

Catalog Number: 401-ML

### **R**DSYSTEMS

DESCRIPTION	
Source	<i>E. coli</i> -derived mouse IL-1 beta/IL-1F2 protein Val118-Ser269, with an N-terminal Met Accession # NP_032387
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	17 kDa

SPECIFICATIONS	
Activity	Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells. Symons, J.A. <i>et al.</i> (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. <i>et al.</i> (eds): IRL Press. 272. The ED <sub>50</sub> for this effect is 2-10 pg/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE	
Reconstitution	Reconstitute at 100 µg/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	Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
	<ul> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> </ul>
	1 month 2 to 8 °C under sterile conditions after reconstitution

- 3 months, -20 to -70 °C under sterile conditions after reconstitution.
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#### BACKGROUND

IL-1 is a name that designates two pleiotropic cytokines, IL-1α (IL-1F1) and IL-1β (IL-1F2), which are the products of distinct genes. IL-1α and IL-1β are structurally related polypeptides that share approximately 17% amino acid (aa) identity in mouse. Both proteins are produced by a wide variety of cells in response to inflammatory agents, infections, or microbial endotoxins. While IL-1α and IL-1β are regulated independently, they bind to the same receptor and exert identical biological effects. IL-1 RI binds directly to IL-1α or IL-1β 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 RI has high affinity for IL-1β but functions as a decoy receptor and negative regulator of IL-1β activity. IL-1ra functions as a competitive antagonist by preventing IL-1α and IL-1β from interacting with IL-1 RI (1-4). The mouse IL-1β cDNA encodes a 269 aa precursor. A 117 aa propeptide is cleaved intracellularly by the cysteine protease IL-1β-converting enzyme (Caspase-1/ICE) to generate the active cytokine (5, 6). The 17 kDa mature mouse IL-1β shares 90% aa sequence identity with cotton rat and rat and 65%-78% identity with canine, equine, feline, human, porcine, and rhesus IL-1β.

#### References:

- 1. Allan, S.M. *et al.* (2005) Nat. Rev. Immunol. **5**:629.
- 2. Boraschi, D. and A. Tagliabue (2006) Vitam. Horm. 74:229.
- 3. Kornman, K.S. (2006) Am. J. Clin. Nutr. 83:475S
- 4. Isoda, K. and F. Ohsuzu (2006) J. Atheroscler. Thromb. 13:21.
- 5. Gray, P.W. et al. (1986) J. Immunol. 137:3644.
- 6. Martinon, F. and J. Tschopp (2007) Cell Death Differ. 14:10.

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