

## DESCRIPTION

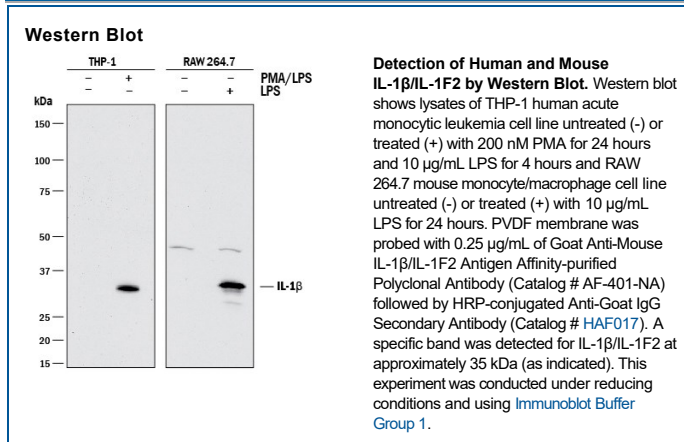
<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse IL-1 $\beta$ /IL-1F2 in direct ELISAs and Western blots. In direct ELISAs, less than 15% cross-reactivity with recombinant porcine IL-1 $\beta$ is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse IL-1 $\beta$ /IL-1F2 Val118-Ser269 Accession # NP_032387
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 $\mu$ m filtered solution in PBS.

## APPLICATIONS

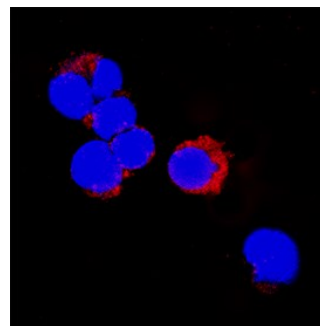
**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.25 $\mu$ g/mL	See Below
<b>Immunocytochemistry</b>	5-15 $\mu$ g/mL	See Below
<b>Immunohistochemistry</b>	5-15 $\mu$ g/mL	See Below
<b>Simple Western</b>	2.5 $\mu$ g/mL	See Below
<b>Neutralization</b>	Measured by its ability to neutralize IL-1 $\beta$ /IL-1F2-induced proliferation in the D10.G4.1 mouse helper T cell line. Symons, J.A. <i>et al.</i> (1987) in <i>Lymphokines and Interferons, a Practical Approach</i> . Clemens, M.J. <i>et al.</i> (eds): IRL Press. 272. The Neutralization Dose (ND <sub>50</sub> ) is typically $\leq$ 0.25 $\mu$ g/mL in the presence of 50 pg/mL Recombinant Mouse IL-1 $\beta$ /IL-1F2.	

## DATA

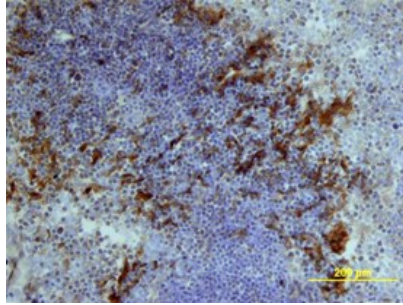


## Immunocytochemistry



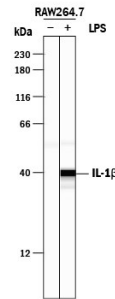
**IL-1 $\beta$ /IL-1F2 in MCF-7 Human Cell Line.** IL-1 $\beta$ /IL-1F2 was detected in immersion fixed MCF-7 human breast cancer cell line using Goat Anti-Mouse IL-1 $\beta$ /IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) at 8  $\mu$ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

## Immunohistochemistry



**IL-1 $\beta$ /IL-1F2 in Mouse Thymus.** IL-1 $\beta$ /IL-1F2 was detected in perfusion fixed frozen sections of mouse thymus using Goat Anti-Mouse IL-1 $\beta$ /IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) at 15  $\mu$ g/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

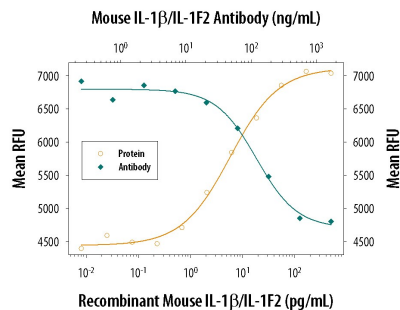
## Simple Western



**Detection of Mouse IL-1 $\beta$ /IL-1F2 by Simple Western™.** Simple Western lane view shows lysates of RAW 264.7 mouse monocyte/macrophage cell line untreated (-) or treated (+) with 10  $\mu$ g/mL LPS for 24 hours, loaded at 0.5 mg/mL. A specific band was detected for IL-1 $\beta$ /IL-1F2 at approximately 40 kDa (as indicated) using 2.5  $\mu$ g/mL of Goat Anti-Mouse IL-1 $\beta$ /IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.



## Neutralization



**Cell Proliferation Induced by IL-1 $\beta$ /IL-1F2 and Neutralization by Mouse IL-1 $\beta$ /IL-1F2 Antibody.** Recombinant Mouse IL-1 $\beta$ /IL-1F2 (Catalog # 401-ML) stimulates proliferation in the the D10.G4.1 mouse helper T cell line in a dose-dependent manner (orange line) as measured by Resazurin (Catalog # AR002). Proliferation elicited by Recombinant Mouse IL-1 $\beta$ /IL-1F2 (50 pg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse IL-1 $\beta$ /IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA). The ND<sub>50</sub> is typically  $\leq$ 0.25  $\mu$ g/mL.

## PREPARATION AND STORAGE

**Reconstitution** Reconstitute at 0.2 mg/mL in sterile PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.  
\*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C

**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.
- 6 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, IL1B), which are the products of distinct genes. IL-1 $\alpha$  and IL-1 $\beta$  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-1 $\alpha$  and IL-1 $\beta$  are regulated independently, they bind to the same receptor and exert identical biological effects. IL-1 R1 binds directly to IL-1 $\alpha$  or IL-1 $\beta$  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 $\beta$  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 R1. Intracellular cleavage of the IL-1 beta precursor by Caspase-1/ICE is a key step in the inflammatory response. The 17 kDa molecular weight mature mouse IL-1 $\beta$  shares 90% aa sequence identity with cotton rat and rat and 67%-78% with canine, equine, feline, human, porcine, and rhesus macaque IL-1 $\beta$ . IL-1 $\beta$  functions in a central role in immune and inflammatory responses, bone remodeling, fever, carbohydrate metabolism, and GH/IGF-I physiology. IL-1 beta dysregulation is implicated in many pathological conditions including sepsis, rheumatoid arthritis, inflammatory bowel disease, acute and chronic myelogenous leukemia, insulin-dependent diabetes mellitus, atherosclerosis, neuronal injury, and aging-related diseases.