

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-1 β /IL-1F2 in sandwich ELISAs and Western blots. In sandwich ELISAs, less than 4% cross-reactivity with recombinant rat (rr) IL-1 β and less than 0.1% with recombinant porcine (rp) IL-1 β , recombinant human IL-1 α , rpIL-1 α , rrIL-1 α , recombinant mouse (rm) IL-1 α , and rmIL-1 β is observed.
Source	Recombinant Monoclonal Mouse IgG ₁ Clone # 2805R
Purification	Protein A or G purified from cell culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human IL-1 β /IL-1F2
Endotoxin Level	<0.10 EU per 1 μ g of the antibody by the LAL method.
Formulation	Supplied as a solution in PBS. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 μ m filtered solution in PBS.

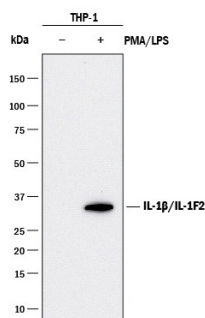
APPLICATIONS

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
Western Blot	1 μ g/mL	See Below
Immunocytochemistry	8-25 μ g/mL	See Below
Simple Western	10 μ g/mL	See Below
Human IL-1β/IL-1F2 Sandwich Immunoassay		Reagent
ELISA Capture	2-8 μ g/mL	Human IL-1 β /IL-1F2 Antibody (Catalog # MAB601R)
ELISA Detection	0.1-0.4 μ g/mL	Human IL-1 β /IL-1F2 Biotinylated Antibody (Catalog # BAF201)
Standard		Recombinant Human IL-1 β /IL-1F2 (Catalog # 201-LB)
Neutralization	Measured by its ability to neutralize IL-1 β /IL-1F2-induced proliferation in the D10.G4.1 mouse helper T cell line. The Neutralization Dose (ND50) is typically 50-200 ng/mL in the presence of 50 pg/mL Recombinant Human IL-1 β /IL-1F2.	

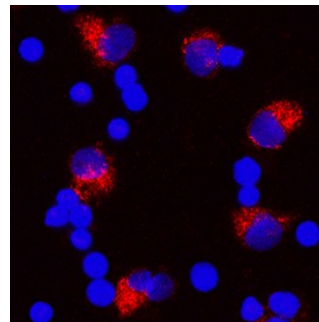
DATA

Western Blot



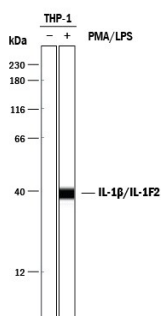
Detection of Human IL-1 β /IL-1F2 by Western Blot. Western blot shows lysates of THP-1 human acute monocytic leukemia cell line untreated (-) or treated (+) with 200 nM PMA for 24 hours and 10 μ g/mL LPS for 3 hours. PVDF membrane was probed with 1 μ g/mL of Mouse Anti-Human IL-1 β /IL-1F2 Monoclonal Antibody (Catalog # MAB601R) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for IL-1 β /IL-1F2 at approximately 35 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



IL-1 β /IL-1F2 in Human PBMCs. IL-1 β /IL-1F2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) treated with 1 μ g/mL LPS and 3 μ M monensin for 24 hours using Mouse Anti-Human IL-1 β /IL-1F2 Monoclonal Antibody (Catalog # MAB601R) at 10 μ g/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

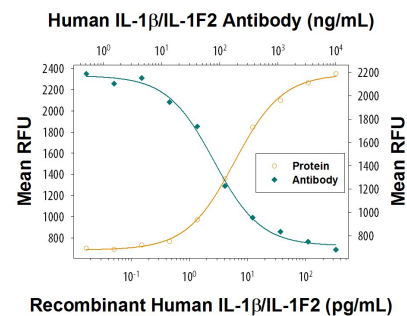
Simple Western



Detection of Human IL-1 β /IL-1F2 by Simple Western™. Simple Western lane view shows lysates of THP-1 human acute monocytic leukemia cell line untreated (-) or treated (+) with 200 nM PMA for 200 nM and 10 μ g/mL LPS for 3 hours, loaded at 0.2 mg/mL. A specific band was detected for IL-1 β /IL-1F2 at approximately 37 kDa (as indicated) using 10 μ g/mL of Mouse Anti-Human IL-1 β /IL-1F2 Monoclonal Antibody (Catalog # MAB601R). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.



Neutralization



Cell Proliferation Induced by IL-1 β /IL-1F2 and Neutralization by Human IL-1 β /IL-1F2 Antibody. Recombinant Human IL-1 β /IL-1F2 (Catalog # 201-LB) stimulates proliferation in 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 Human IL-1 β /IL-1F2 (50 pg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-1 β /IL-1F2 Monoclonal Antibody (Catalog # MAB601R). The ND₅₀ is typically 50-200 ng/mL.

PREPARATION AND STORAGE

Shipping The product is shipped with polar packs. 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 opening.
- 6 months, -20 to -70 °C under sterile conditions after opening.

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 21% amino acid (aa) identity in human. 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 human IL-1 β cDNA encodes a 269 aa precursor. A 116 aa propeptide is cleaved intracellularly by the cysteine protease IL-1 β -converting enzyme (Caspase-1/ICE) to generate the active cytokine (5-7). The 17 kDa mature human IL-1 β shares 96% aa sequence identity with rhesus and 67-78% with canine, cotton rat, equine, feline, mouse, porcine, and rat IL-1 β .

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. March, C.J. *et al.* (1985) *Nature* **315**:641.
6. Auron, P.E. *et al.* (1984) *Proc. Natl. Acad. Sci. USA* **81**:7907.
7. Martinon, F. and J. Tschopp (2007) *Cell Death Differ.* **14**:10.