Human IL-1β/IL-1F2 Antibody

Monoclonal Mouse IgG_1 Clone # 8516

Catalog Number: MAB201

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-1β/IL-1F2 in Western blots. Shows less than 5% cross-reactivity with recombinant mouse (rm) IL-1β and rpIL-1β and no cross-reactivity with rrIL-1β, rmIL-1α, rhIL-1ra, rmIL-1ra, or rrIL-1α.
Source	Monoclonal Mouse IgG_1 Clone # 8516
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human IL-1β/IL-1F2 aa 117-269 Accession # P01584
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

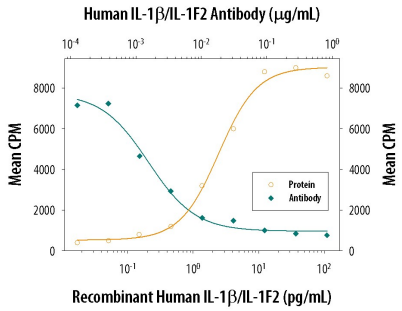
APPLICATIONS

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 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	See Below
Intracellular Staining by Flow Cytometry	2.5 µg/10^6 cells	Human peripheral blood mononuclear cells treated with LPS, fixed with paraformaldehyde, and permeabilized with saponin
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Neutralization	Measured by its ability to neutralize IL−1β/IL−1F2-induced proliferation in the D10.G4.1 mouse helper T cell line. Symons, J.A. *et al.* (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 272. The Neutralization Dose (ND_{50}) is typically 0.001-0.003 µg/mL in the presence of 50 pg/mL Recombinant Human IL−1β/IL−1F2 and 1.25 µg/mL concanavalin A.	

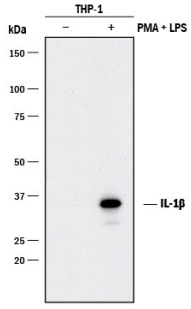
DATA

Neutralization



Cell Proliferation Induced by IL-1β/IL-1F2 and Neutralization by Human IL-1β/IL-1F2 Antibody. Recombinant Human IL-1β/IL-1F2 (Catalog # 201-LB) stimulates proliferation in the the D10.G4.1 mouse helper T cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-1β/IL-1F2 (50 pg/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-1β/IL-1F2 Monoclonal Antibody (Catalog # MAB201). The ND_{50} is typically 0.001-0.003 µg/mL in the presence of concanavalin A (1.25 µg/mL).

Western Blot



Detection of Human IL-1β/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 µg/mL LPS and 3 hours. PVDF membrane was probed with 1 µg/mL of Mouse Anti-Human IL-1β/IL-1F2 Monoclonal Antibody (Catalog # MAB201) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for IL-1β/IL-1F2 at approximately 36 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

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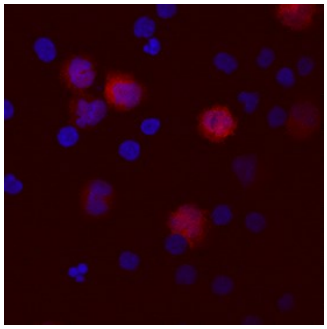
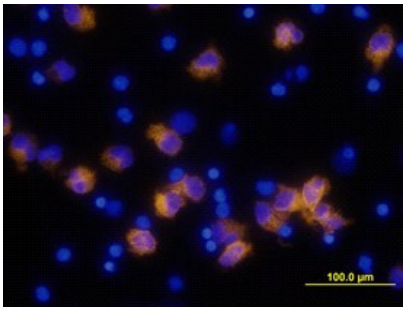
Immunocytochemistry



IL-1β/IL-1F2 in Human PBMCs. IL-1β/IL-1F2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) using Human IL-1β/IL-1F2 Monoclonal Antibody (Catalog # MAB201) at 10 µg/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). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

Immunocytochemistry



IL-1β/IL-1F2 in Human PBMCs. IL-1β/IL-1F2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) treated with LPS and monensin using Human IL-1β/IL-1F2 Monoclonal Antibody (Catalog # MAB201) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (yellow; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 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-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 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-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 RII 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 human IL-1β cDNA encodes a 269 aa precursor. A 116 aa propeptide is cleaved intracellularly by the cysteine protease IL-1β-converting enzyme (Caspase-1/ICE) to generate the active cytokine (5-7). The 17 kDa mature human IL-1β shares 96% aa sequence identity with rhesus and 67-78% with canine, cotton rat, equine, feline, mouse, porcine, and rat IL-1β.

References:

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