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, rrIL-1ra, rmIL-1ra, or rrIL-1α.

Source: Monoclonal Mouse IgG1 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 either lyophilized or 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.

<table>
<thead>
<tr>
<th>Recommended Concentration</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>1 µg/mL See Below</td>
</tr>
<tr>
<td>Immunocytochemistry</td>
<td>8-25 µg/mL See Below</td>
</tr>
<tr>
<td>Intracellular Staining by Flow Cytometry</td>
<td>2.5 µg/10⁶ cells Human peripheral blood mononuclear cells treated with LPS, fixed with paraformaldehyde, and permeabilized with saponin</td>
</tr>
<tr>
<td>Simple Western</td>
<td>10 µg/mL TF-1 human erythroleukemic cell line</td>
</tr>
<tr>
<td>CyTOF-ready</td>
<td>Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.</td>
</tr>
</tbody>
</table>

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 (ND₅₀) is typically 0.001-0.003 µg/mL in the presence of 50 pg/mL Recombinant Human IL-1β/IL-1F2.

DATA

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 # 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.

Immunocytochemistry

IL-1β/IL-1F2 was detected in 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™ 657-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # 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.

Simple Western
Detection of Human IL-1β/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 and 10 µg/ml
LPS for 24 hrs and 3 hrs, respectively, loaded
at 0.2 mg/mL. A specific band was detected
for IL-1β/IL-1F2 at approximately 38 kDa (as
indicated) using 10 µg/mL of Mouse Anti-
Human IL-1β/IL-1F2 Monoclonal Antibody
(Catalog # MAB201). This experiment was
conducted under reducing conditions and
using the 12-230 kDa separation system.

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 # Catalog # 201-
LBS) 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 ND50 is typically
0.001-0.003 µg/mL.

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, IL1B), 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 receptor binds directly to IL-1α or IL-1β and then associates with IL-1 receptor accessory protein (IL-1 R3/IL-1 R AcP) to form a high-affinity receptor complex that are competent for signal transduction. IL-1RI 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. Intracellular cleavage of the IL-1α beta precursor by Caspase-1/ICE is a key step in the inflammatory response. The 17 kDa molecular weight 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. IL-1β 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.