Species Reactivity: Human

Specificity: Detects human IL-1β/IL-1F2 in sandwich ELISAs and Western blots. In sandwich ELISAs, less than 4% cross-reactivity with recombinant rat (rr) IL-1β and less than 0.1% with recombinant porcine (rp) IL-1β, recombinant human IL-1α, rpIL-1α, rrIL-1α, recombinant mouse (rm) IL-1α, and rmIL-1β is observed.

Source: Monoclonal Mouse IgG1 Clone # 2805

Purification: Protein A or G purified from hybridoma culture supernatant

Immunogen: E. coli-derived recombinant human IL-1β/IL-1F2

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.

Recommended Concentration

<table>
<thead>
<tr>
<th>Sample</th>
<th>Western Blot</th>
<th>Immunocytochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 µg/mL</td>
<td></td>
<td>8-25 µg/mL</td>
</tr>
</tbody>
</table>

Human IL-1β/IL-1F2 Sandwich Immunoassay

Reagent

<table>
<thead>
<tr>
<th>ELISA Capture</th>
<th>Human IL-1β/IL-1F2 Antibody (Catalog # MAB601)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELISA Detection</td>
<td>Human IL-1β/IL-1F2 Biotinylated Antibody (Catalog # BAF201)</td>
</tr>
<tr>
<td>Standard</td>
<td>Recombinant Human IL-1β/IL-1F2 (Catalog # 201-LB)</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. The Neutralization Dose (ND50) is typically 0.05-0.2 µg/mL in the presence of 0.05 ng/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 # MAB601) 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.

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 (0.05 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-1β/IL-1F2 Monoclonal Antibody (Catalog # MAB601). The ND50 is typically 0.05-0.2 µg/mL.

Immunocytochemistry

IL-1β/IL-1F2 in Human PBMCs. IL-1β/IL-1F2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) using Mouse Anti-Human IL-1β/IL-1F2 Monoclonal Antibody (Catalog # MAB601) at 8 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). Specific staining was localized to cytoplasm. 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, 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 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. 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 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.

**Product Specific Notices**
This product is covered by one or more patents, including US Patent # 5,681,933.