Mouse IL-1β/IL-1F2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-401-NA

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse IL-1β/IL-1F2 in direct ELISAs and Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant mouse IL-1β/IL-1F2 Val118-Ser269 Accession # NP_032387
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.

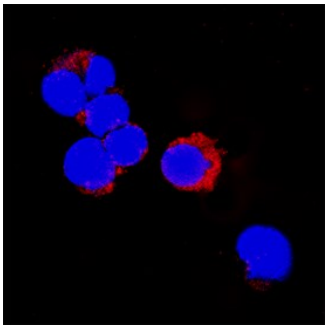
APPLICATIONS

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	Sample
Western Blot	0.25 µg/mL	See Below
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Simple Western	2.5 µg/mL	See Below
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 ≤0.25 µg/mL in the presence of 50 pg/mL Recombinant Mouse IL-1β/IL-1F2.	

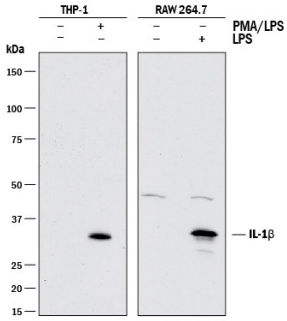
DATA

Immunocytochemistry



IL-1β/IL-1F2 in MCF-7 Human Cell Line. IL-1ß/IL-1F2 was detected in immersion fixed MCF-7 human breast cancer cell line using Goat Anti-Mouse IL-1ß/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) at 8 µg/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.

Western Blot



Detection of Human and Mouse 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 for 4 hours and RAW 264.7 mouse monocyte/macrophage cell line untreated (-) or treated (+) with 10 µg/mL LPS for 24 hours. PVDF membrane was probed with 0.25 µg/mL of Goat Anti-Mouse IL-1ß/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for IL-1ß/IL-1F2 at approximately 35 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

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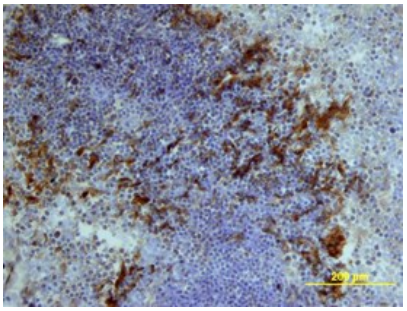
Mouse IL-1β/IL-1F2 Antibody

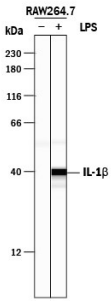
Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-401-NA

Immunohistochemistry



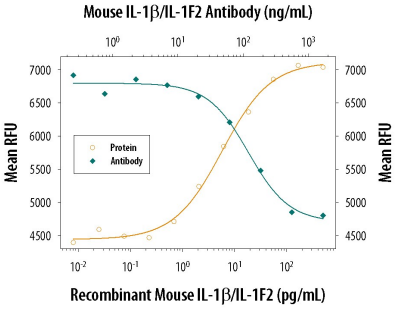
IL-1β/IL-1F2 in Mouse Thymus. IL-1ß/IL-1F2 was detected in perfusion fixed frozen sections of mouse thymus using Goat Anti-Mouse IL-1ß/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue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

Simple Western



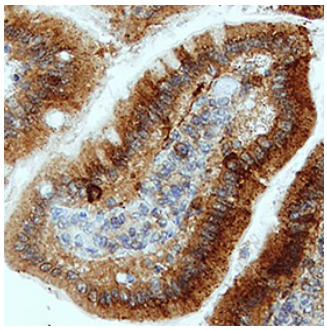
Detection of Mouse IL-1β/IL-1F2 by Simple Western™. Simple Western lane view shows lysates of RAW 264.7 mouse monocyte/macrophage cell line untreated (-) or treated (+) with 10 µg/mL LPS for 24 hours, loaded at 0.5 mg/mL. A specific band was detected for IL-1ß/IL-1F2 at approximately 40 kDa (as indicated) using 2.5 µg/mL of Goat Anti-Mouse IL-1ß/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-1β/IL-1F2 and Neutralization by Mouse IL-1β/IL-1F2 Antibody. Recombinant Mouse IL-1ß/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-1ß/IL-1F2 (50 pg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse IL-1ß/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA). The ND_{50} is typically ≤ 0.25 µg/mL.

Immunohistochemistry



Detection of IL-1β/IL-1F2 in Mouse Intestine. IL-1β/IL-1F2 was detected in perfusion fixed paraffin-embedded sections of Mouse Intestine using Goat Anti-Mouse IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-401-NA) at 5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Sheep IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC006). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in epithelial cells. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

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-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 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-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 mouse IL-1β shares 90% aa sequence identity with cotton rat and rat and 67%-78% with canine, equine, feline, human, porcine, and rhesus macaque 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.

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