Human IL-1β/IL-1F2 Antibody
Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-201-NA

DESCRIPTION
Species Reactivity Human
Specificity Detects human IL-1β/IL-1F2 in direct ELISAs and Western blots.
Source Polyclonal Goat IgG
Purification Antigen Affinity-purified
Immunogen E. coli-derived recombinant human IL-1β/IL-1F2
Accession # NP_000567
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.

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.

Data
Dual RNAscope ISH-IHC Compatible
IL-1β/IL-1F2 in Human Tonsil Using Dual RNAscope®ISH and VIC. IL-1β/IL-1F2 mRNA was detected in formalin-fixed paraffin-embedded tissue sections of human tonsil probed with ACD RNAscope®Probe (Catalog # 310361) and stained using ACD RNAscope®2.5 HD Detection Reagents-Red (top image, Catalog # 32260). Adjacent tissue section was processed for immunohistochemistry using R&D Systems Goat Anti-Human IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-201-NA) at 1 μg/mL, for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (R&D Systems, Catalog # Catalog # VC004) and DAB chromogen (lower image, yellow-brown). Tissue was counterstained with hematoxylin (blue).

Immunohistochemistry
IL-1β/IL-1F2 in Human Tonsil. IL-1β/IL-1F2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) treated with LPS and monensin using Goat Anti-Human IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-201-NA) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # Catalog # NL001) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

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 0.1 µg/mL of Goat Anti-Human IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-201-NA) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HA017). 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 in Human PBMCs. IL-1β/IL-1F2 was detected in formalin-fixed human peripheral blood mononuclear cells (PBMCs) treated with LPS and monensin using Goat Anti-Human IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-201-NA) at 10 µg/mL, for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # Catalog # NL001) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Formulation
Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

Recommended Concentration
Sample
1-15 µg/mL
See Below
0.1 µg/mL
See Below
5-15 µg/mL
See Below
1-15 µg/mL
See Below
1 µg/mL
TF-1 human erythroleukemic cell line
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. (eds): IRL Press. 272. The Neutralization Dose (ND50) is typically 6-42 ng/mL in the presence of 50 pg/mL Recombinant Human IL-1β/IL-1F2.

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.
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, and loaded at 0.2 mg/mL. A specific band was detected for IL-1β/IL-1F2 at approximately 39 kDa (as indicated) using 1 µg/mL of Goat Anti-Human IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-201-NA). 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-LB) stimulates proliferation in the D10.G4.1 mouse helper T cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-10/IL-1F2 (50 pg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human IL-1β/IL-1F2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-201-NA). The ND50 is typically 6-42 ng/mL.

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 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 RI 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-1a 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.