Human IL-6 Antibody

Monoclonal Mouse IgG_{2B} Clone # 1936

Catalog Number: MAB2061

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-6 in direct ELISAs. Does not cross-react with recombinant IL-6 from mouse, rat, or pig.
Source	Monoclonal Mouse IgG_{2B} Clone # 1936
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human IL-6 Val30-Met212 Accession # P05231
Endotoxin Level	<0.20 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and NaCl 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.

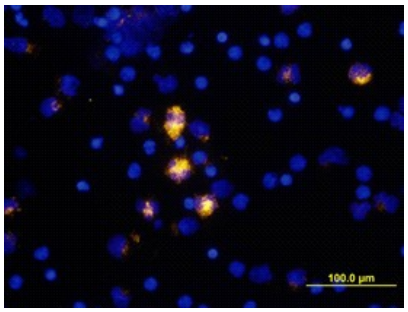
APPLICATIONS

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
Immunocytochemistry	8-25 µg/mL	See Below
Intracellular Staining by Flow Cytometry	0.25 µg/10^6 cells	See Below
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-6-induced proliferation in the T1165.85.2.1 mouse plasmacytoma cell line. The Neutralization Dose (ND_{50}) is typically 0.05-0.15 µg/mL in the presence of 2.5 ng/mL Recombinant Human IL-6.	

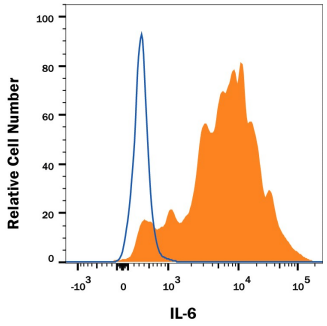
DATA

Immunocytochemistry



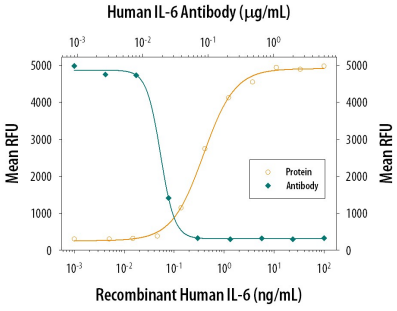
IL-6 in Human PBMCs. IL-6 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) stimulated with LPS and monensin using Mouse Anti-Human IL-6 Monoclonal Antibody (Catalog # MAB2061) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (yellow; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

Intracellular Staining by Flow Cytometry



Detection of IL-6 in Human PBMCs by Flow Cytometry. Human peripheral blood mononuclear cells (PBMCs) treated with 100 µg/mL LPS for 24 hours were stained with Mouse Anti-Human IL-6 Monoclonal Antibody (Catalog # MAB2061, filled histogram) or isotype control antibody (Catalog # MAB004, open histogram), followed by Phycoerythrin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005). View our protocol for Staining Intracellular Molecules.

Neutralization



Cell Proliferation Induced by IL-6 and Neutralization by Human IL-6 Antibody. Recombinant Human IL-6 (Catalog # 206-IL) stimulates proliferation in the T1165.85.2.1 mouse plasmacytoma cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-6 (2.5 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-6 Monoclonal Antibody (Catalog # MAB2061). The ND_{50} is typically 0.05-0.15 µg/mL.

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Human IL-6 Antibody

Monoclonal Mouse IgG_{2B} Clone # 1936

Catalog Number: MAB2061

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

Interleukin 6 (IL-6) is a pleiotropic α-helical cytokine that plays important roles in acute phase reactions, inflammation, hematopoiesis, bone metabolism, and cancer progression. IL-6 activity is essential for the transition from acute inflammation to either acquired immunity or chronic inflammatory disease. It is secreted by multiple cell types as a 22-28 kDa phosphorylated and variably glycosylated molecule (1-4). Mature human IL-6 is 183 amino acids (aa) in length and shares 41% aa sequence identity with mouse and rat IL-6 (5). Alternate splicing generates several isoforms with internal deletions, some of which exhibit antagonistic properties (6-9). Human IL-6 is equally active on mouse and rat cells (10). IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL-6 R) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R, triggering IL-6 R association with gp130 and gp130 dimerization (11). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (12). Soluble forms of IL-6 R are generated by both alternate splicing and proteolytic cleavage (3). In a mechanism known as trans-signaling, complexes of soluble IL-6 and IL-6 R elicit responses from gp130-expressing cells that lack cell surface IL-6 R (3). Trans-signaling enables a wider range of cell types to respond to IL-6, as the expression of gp130 is ubiquitous, while that of IL-6 R is predominantly restricted to hepatocytes, leukocytes, and lymphocytes (3). Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R but not from other cytokines that utilize gp130 as a coreceptor (4, 13).

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