biotechne **R**Dsystems

Human IL-6 Antibody

Recombinant Monoclonal Mouse IgG2B Clone # 1936R Catalog Number: MAB2061R

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	Recombinant Monoclonal Mouse IgG _{2B} Clone # 1936R		
Purification	Protein A or G purified from cell culture supernatant		
Immunogen	<i>E. coli</i> -derived recombinant human IL-6 Val30-Met212 Accession # P05231		
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.		

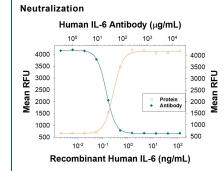
APPLICATIONS

DATA

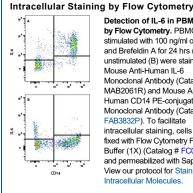
Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.				
	Recommended Concentration	Sample		
Intracellular Staining by Flow Cytometry	0.25 µg/10 ⁶ cells	See Below		
Neutralization		utralize IL-6-induced proliferation in the T1165.85.2.1 mouse plasmacytoma cell line. The s typically 8.00-80.0 ng/mL in the presence of 2.5 ng/mL Recombinant Human IL-6.		

Intracellular Staining by Flow Cytometry 100 **Relative Cell Number** 60 40 20 104 -10³ 10 0 10 IL-6

Detection of IL-6 in Human PBMCs by Flow Cytometry. Human peripheral blood mononuclear cells (PBMCs) treated with 100 ng/mL LPS for 24 hours were stained with Mouse Anti-Human IL-6 Monoclonal Antibody (Catalog # MAB2061R, 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



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), as measured by Resazurin (Catalog # AR002). 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 # MAB2061R). The ND₅₀ is typically 8.00-80.0 ng/mL



Detection of IL-6 in PBMC cells by Flow Cytometry. PBMC stimulated with 100 ng/ml of LPS and Brefeldin A for 24 hrs (A) or unstimulated (B) were stained with Mouse Anti-Human IL-6 Monoclonal Antibody (Catalog # MAB2061R) and Mouse Anti-Human CD14 PE-conjugated Monoclonal Antibody (Catalog # FAB3832P). To facilitate intracellular staining, cells were fixed with Flow Cytometry Fixation Buffer (1X) (Catalog # FC004) and permeabilized with Saponin. View our protocol for Staining Intracellular Molecules.

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Human IL-6 Antibody

Recombinant Monoclonal Mouse IgG_{2B} Clone # 1936R Catalog Number: MAB2061R

RDSYSTEMS

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, alpha -helical, phosphorylated and variably glycosylated cytokine that plays important roles in the acute phase reaction, inflammation, hematopoiesis, bone metabolism, and cancer progression. Mature human IL-6 is 183 amino acids (aa) in length expressed as a 22-28 kDA molecular weight protein. IL-6 shares 39% aa sequence identity with mouse and rat IL-6. Alternative splicing generates several isoforms with internal deletions, some of which exhibit antagonistic properties. IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL-6 R alpha) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R alpha, triggering IL-6 R alpha association with gp130 and gp130 dimerization. gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM. Soluble forms of IL-6 R alpha are generated by both alternative splicing and proteolytic cleavage. In a mechanism known as trans-signaling, complexes of soluble IL-6 and IL-6 R alpha elicit responses from gp130 expressing cells that lack cell surface IL-6 R alpha. 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 alpha is predominantly restricted to hepatocytes, monocytes, and resting lymphocytes. Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R alpha but not from other cytokines that use gp130 as a co-receptor. IL-6, along with TNF-alpha and IL-1, function to drive the acute inflammatory response and the transition from acute inflammation to either acquired immunity or chronic inflammatory disease. When dysregulated, it contributes to chronic inflammation in obesity, insulin resistance, inflammatory bowel disease, arthritis, sepsis, and atherosclerosis. IL-6 can also function as an anti-inflammatory molecule, as in skeletal muscle where it is secreted in response to exercise. In addition, it enhances hematopoietic stem cell proliferation and the

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