Human IL-2 Antibody

Monoclonal Mouse IgG_1 Clone # 1019340

Catalog Number: MAB104421

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-2 in direct ELISAs.
Source	Monoclonal Mouse IgG_1 Clone # 1019340
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived human IL-2 Ala21-Thr153 Accession # P60568
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.

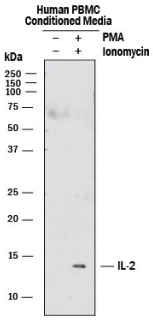
APPLICATIONS

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	2.5 µg/mL	See Below
Immunocytochemistry	8-25 µg/mL	Immersion fixed human peripheral blood mononuclear cells (PBMCs) treated with ionomycin and PMA
ELISA	This antibody functions as an ELISA detection antibody when paired with Mouse Anti-Human IL-2 Monoclonal Antibody (Catalog # MAB104422). *This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human IL-2 DuoSet ELISA Kit (Catalog # DY202) for convenient development of a sandwich ELISA or the Human IL-2 Quantikine ELISA Kit (Catalog # D2050) for a complete optimized ELISA.*	

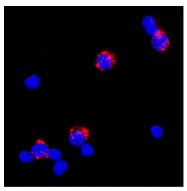
DATA

Western Blot

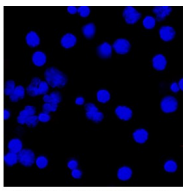


Detection of Human IL-2 by Western Blot. Western blot shows lysates of human PBMC conditioned media untreated (-) or treated (+) with 200mM PMA and Ionomycin 1uM for 24 hours. PVDF membrane was probed with 2.5 µg/mL of Mouse Anti-Human IL-2 Monoclonal Antibody (Catalog # MAB104421) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # Catalog # HAF018). A specific band was detected for IL-2 at approximately 14 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunocytochemistry



Positive (hPBMC cells + Cal & PMA)



Negative (hPBMC cells)

IL-2 in Human PBMCs. IL-2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) treated with ionomycin and PMA (left panel; positive staining) and untreated PBMCs (right panel; negative control) using Mouse Anti-Human IL-2 Monoclonal Antibody (Catalog # MAB104421) 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. Staining was performed using 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.

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BACKGROUND

Interleukin-2 (IL-2) is a O-glycosylated, four α-helix bundle cytokine that has potent stimulatory activity for antigen-activated T cells. It is expressed by $CD4^+$ and $CD8^+$ T cells, γδ T cells, B cells, dendritic cells, and eosinophils (1-3). Mature human IL-2 shares 56% and 66% aa sequence identity with mouse and rat IL-2, respectively. Human and mouse IL-2 exhibit cross-species activity (4). The receptor for IL-2 consists of three subunits that are present on the cell surface in varying preformed complexes (5-7). The 55 kDa IL-2 Rα is specific for IL-2 and binds with low affinity. The 75 kDa IL-2 Rβ, which is also a component of the IL-15 receptor, binds IL-2 with intermediate affinity. The 64 kDa common gamma chain γc/IL-2 Rγ, which is shared with the receptors for IL-4, -7, -9, -15, and -21, does not independently interact with IL-2. Upon ligand binding, signal transduction is performed by both IL-2 Rβ and γc. IL-2 is best known for its autocrine and paracrine activity on T cells. It drives resting T cells to proliferate and induces IL-2 and IL-2 Rα synthesis (1, 2). It contributes to T cell homeostasis by promoting the Fas-induced death of naïve $CD4^+$ T cells but not activated $CD4^+$ memory lymphocytes (8). IL-2 plays a central role in the expansion and maintenance of regulatory T cells, although it inhibits the development of Th17 polarized cells (9-11). Thus, IL-2 may be a key cytokine in the natural suppression of autoimmunity (12, 13).

References:

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