Human IL-2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-202-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-2 in direct ELISAs and Western blots. In direct ELISAs, greater than 50% cross-reactivity with recombinant rabbit IL-2 is observed and less than 20% cross-reactivity with recombinant bovine IL-2, recombinant mouse IL-2 and recombinant rat IL-2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human IL-2 Ala21-Thr153 Accession # P60568
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.

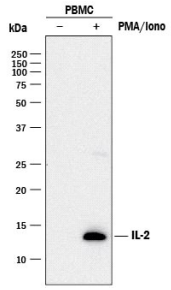
APPLICATIONS

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	0.5 µg/mL	See Below
Immunocytochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize IL-2-induced proliferation in the CTLL-2 mouse cytotoxic T cell line. Gearing, A.J.H. and C.B. Bird (1987) in Lymphokines and Interferons, A Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 276. The Neutralization Dose (ND_{50}) is typically ≤0.15 µg/mL in the presence of 2 ng/mL Recombinant Human IL-2.	
ELISA	This antibody functions as an ELISA detection antibody when paired with Mouse Anti-Human IL-2 Monoclonal Antibody (Catalog # MAB2021). *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.*	

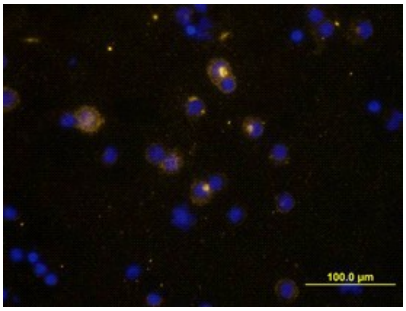
DATA

Western Blot



Detection of Human IL-2 by Western Blot. Western blot shows lysates of monensin treated human peripheral blood mononuclear cells (PBMCs) with no additional treatment (-) or additionally treated (+) with 0.5ug/mL calcium ionomycin (Iono) and 50ng/mL PMA overnight. PVDF membrane was probed with 0.5 µg/mL of Goat Anti-Human IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-202-NA) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). 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



IL-2 in Human PBMCs. IL-2 was detected in immersion fixed human peripheral blood mononuclear cells (PBMCs) stimulated with PMA, ionomycin, and monensin using Goat Anti-Human IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-202-NA) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (yellow; Catalog # NL001) and counter-stained with DAPI (blue). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

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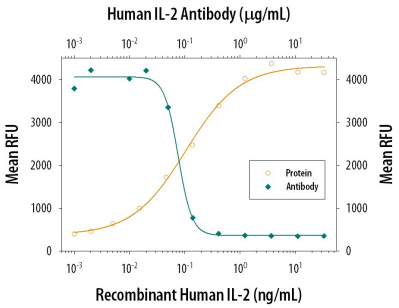
Neutralization



Cell Proliferation Induced by IL-2 and Neutralization by Human IL-2 Antibody. Recombinant Human IL-2 (Catalog # 202-IL) stimulates proliferation in the CTLL-2 mouse cytotoxic T cell line in a dose-dependent manner (orange line) as measured by Resazurin (Catalog # AR002). Proliferation elicited by Recombinant Human IL-2 (2 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-202-NA). The ND_{50} is typically ≤0.15 µg/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

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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