Human/Rat IL-2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-502-NA

DESCRIPTION

Species Reactivity	Human/Rat
Specificity	Detects rat IL-2 in ELISAs. Detects human and rat IL-2 in Western blots. In sandwich immunoassays, less than 0.2% cross-reactivity with recombinant mouse IL-2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant rat IL-2 Ala21-Gln155 Accession # P17108
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 as a 0.2 µm filtered solution in PBS.

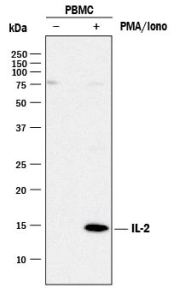
APPLICATIONS

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 µg/mL	See Below
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Rat IL-2 Sandwich Immunoassay		**Reagent**
ELISA Capture	0.2-0.8 µg/mL	Human/Rat IL-2 Antibody (Catalog # AF-502-NA)
ELISA Detection	0.1-0.4 µg/mL	Rat IL-2 Biotinylated Antibody (Catalog # BAF502)
Standard		Recombinant Rat IL-2 (Catalog # 502-RL)
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 0.15-0.75 µg/mL in the presence of 2 ng/mL Recombinant Rat IL-2.	

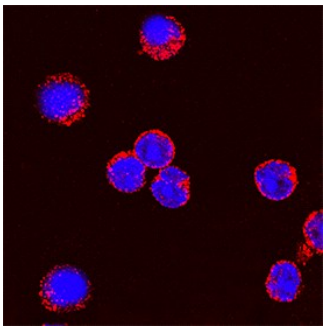
DATA

Western Blot



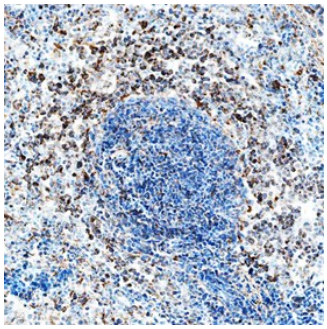
Detection of Human IL-2 by Western Blot. Western blot shows lysates of monensin treated human peripheral blood mononuclear cells (PBMCs) with no additional treatment (-) or additionally treated (+) with 0.5 ug/mL calcium ionomycin (Iono) and 50 ng/mL PMA overnight. PVDF membrane was probed with 2 µg/mL of Goat Anti-Human/Rat IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-502-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



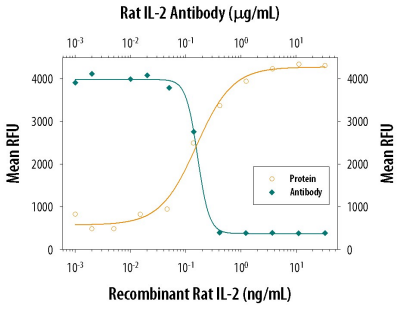
IL-2 in Rat Splenocytes. IL-2 was detected in immersion fixed rat splenocytes stimulated with calcium ionomycin and PMA using Goat Anti-Human/Rat IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-502-NA) at 5 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

Immunohistochemistry



IL-2 in Rat Spleen. IL-2 was detected in immersion fixed frozen sections of rat spleen using Goat Anti-Human/Rat IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-502-NA) at 5 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in lymphocytes. View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Neutralization



Cell Proliferation Induced by IL-2 and Neutralization by Rat IL-2 Antibody. Recombinant Rat IL-2 (Catalog # 502-RL) stimulates proliferation in the CTLL-2 mouse cytotoxic T cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat IL-2 (2 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human/Rat IL-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-502-NA). The ND_{50} is typically 0.15-0.75 µg/mL.

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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 rat IL-2 shares 66% and 73% amino acid sequence identity with human and mouse IL-2, respectively. The receptor for IL-2 consists of three subunits that are present on the cell surface in varying preformed complexes (4-6). 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 (7). IL-2 plays a central role in the expansion and maintenance of regulatory T cells, although it inhibits the development of Th17 polarized cells (8-10). Thus, IL-2 may be a key cytokine in the natural suppression of autoimmunity (11, 12).

References:

1. Ma, A. *et al.* (2006) Annu. Rev. Immunol. **24**:657.
2. Gaffen, S.L. and K.D. Liu (2004) Cytokine **28**:109.
3. McKnight, A. *et al.* (1989) Immunogenetics **30**:145.
4. Liparoto, S.F. *et al.* (2002) Biochemistry **41**:2543.
5. Wang, X. *et al.* (2005) Science **310**:1159.
6. Bodnar, A. *et al.* (2008) Immunol. Lett. **116**:117.
7. Jaleco, S. *et al.* (2003) J. Immunol. **171**:61.
8. Malek, T.R. (2003) J. Leukoc. Biol. **74**:961.
9. Laurence, A. *et al.* (2007) Immunity **26**:371.
10. Kryczek, I. *et al.* (2007) J. Immunol. **178**:6730.
11. Afzali, B. *et al.* (2007) Clin. Exp. Immunol. **148**:32.
12. Fehervari, Z. *et al.* (2006) Trends Immunol. **27**:109.

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