

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse IL-15 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 15% cross-reactivity with recombinant human IL-15 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse IL-15 Asn49-Ser162 Accession # P48346
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.

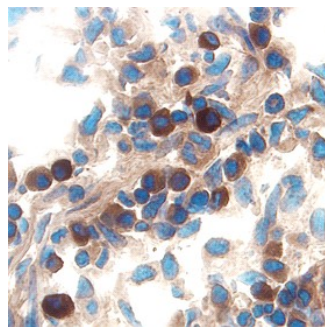
APPLICATIONS

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	0.1 µg/mL	Recombinant Mouse IL-15 (Catalog # 447-ML)
Immunohistochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize IL-15-induced proliferation in the CTLL-2 mouse cytotoxic T cell line. Avanzi, G. <i>et al.</i> (1988) <i>Br. J. Haematol.</i> 69 :359. The Neutralization Dose (ND ₅₀) is typically 0.4-2.4 µg/mL in the presence of 30 ng/mL Recombinant Mouse IL-15.	

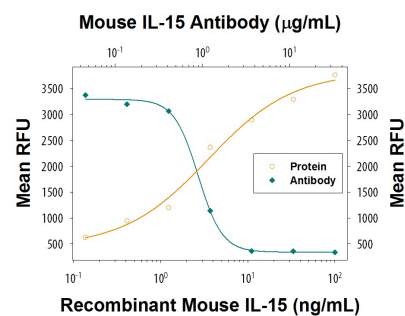
DATA

Immunohistochemistry



IL-15 in Mouse Intestine. IL-15 was detected in immersion fixed frozen sections of mouse intestine (Peyer patch) using Goat Anti-Mouse IL-15 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF447) at 15 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 labeling was localized to the cytoplasm of lymphocytes in villi. View our protocol for [Chromogenic IHC Staining of Frozen Tissue Sections](#).

Neutralization



Cell Proliferation Induced by IL-15 and Neutralization by Mouse IL-15 Antibody. Recombinant Mouse IL-15 (Catalog # 447-ML) 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 Mouse IL-15 (30 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Mouse IL-15 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF447). The ND₅₀ is typically 0.4-2.4 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. <ul style="list-style-type: none"> • 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 15 (IL-15) is a widely expressed 14 kDa cytokine that is structurally and functionally related to IL-2 (1-3). Mature mouse IL-15 shares 70% and 96% amino acid sequence identity with human and rat IL-15, respectively. Alternate splicing generates isoforms of IL-15 with either a long or short signal peptide (LSP or SSP), and the SSP isoform is retained intracellularly (4). IL-15 binds with high affinity to IL-15 R α (5). It binds with lower affinity to a complex of IL-2 R β and the common gamma chain (γ c) which are also subunits of the IL-2 receptor complex (1, 6). IL-15 associates with IL-15 R α in the endoplasmic reticulum, and this complex is expressed on the cell surface (7, 8). The dominant mechanism of IL-15 action is known as transpresentation in which IL-15 and IL-15 R α are coordinately expressed on the surface of one cell and interact with complexes of IL-2 R β / γ c on adjacent cells (9). This enables cells to respond to IL-15 even if they do not express IL-15 R α (8, 10). Soluble IL-15-binding forms of IL-15 R α can be generated by proteolytic shedding or alternate splicing (11-13). These molecules retain the ability to bind tightly to IL-15 and can either inhibit or augment IL-15 function (5, 12, 13). Consistent with its shared use of IL-2 receptor subunits, IL-15 induces IL-2-like effects in lymphocyte development and homeostasis (3). It is particularly important for the maintenance and activation of NK cells and CD8⁺ memory T cells (3). IL-15 also exerts pleiotropic effects on other hematopoietic cells and non-immune cells (2). Ligation of membrane-associated IL-15/IL-15 R α complexes induces reverse signaling that promotes cellular adhesion, tyrosine phosphorylation of intracellular proteins, and cytokine secretion by the IL-15/IL-15 R α expressing cells (14, 15).

References:

1. Grabstein, K. *et al.* (1994) *Science* **264**:965.
2. Budagian, V. *et al.* (2006) *Cytokine Growth Factor Rev.* **17**:259.
3. Ma, A. *et al.* (2006) *Annu. Rev. Immunol.* **24**:657.
4. Tagaya, Y. *et al.* (1997) *Proc. Natl. Acad. Sci. USA* **94**:14444.
5. Giri, J.G. *et al.* (1995) *EMBO* **14**:3654.
6. Giri, J. *et al.* (1994) *EMBO J.* **13**:2822.
7. Duitman, E.H. *et al.* (2008) *Mol. Cell. Biol.* **28**:4851.
8. Dubois, S. *et al.* (2002) *Immunity* **17**:537.
9. Stonier, S.W. and K.S. Schluns (2010) *Immunol. Lett.* **127**:85.
10. Burkett, P.R. *et al.* (2004) *J. Exp. Med.* **200**:825.
11. Budagian, V. *et al.* (2004) *J. Biol. Chem.* **279**:40368.
12. Mortier, E. *et al.* (2004) *J. Immunol.* **173**:1681.
13. Bulanova, E. *et al.* (2007) *J. Biol. Chem.* **282**:13167.
14. Budagian, V. *et al.* (2004) *J. Biol. Chem.* **279**:42192.
15. Neely, G.G. *et al.* (2004) *J. Immunol.* **172**:4225.