

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-15 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human (rh) IL-2, recombinant mouse IL-15, or rhIL-21 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 34559
<b>Purification</b>	Protein A or G purified from ascites
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human IL-15 Asn49-Ser162 Accession # P40933
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	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.

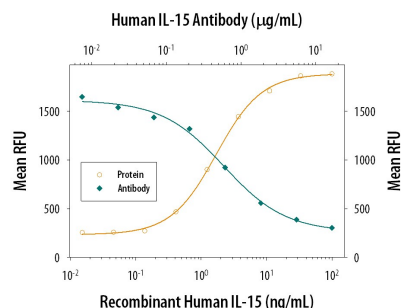
## APPLICATIONS

**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
<b>Western Blot</b>	1 µg/mL	Recombinant Human IL-15 (Catalog # <a href="#">247-IL</a> )
<b>Intracellular Staining by Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	See below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
<b>Neutralization</b>	Measured by its ability to neutralize IL-15-induced proliferation in the MO7e human megakaryocytic leukemic cell line. Avanzi, G. <i>et al.</i> (1988) Br. J. Haematol. <b>69</b> :359. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.1-0.5 µg/mL in the presence of 5 ng/mL Recombinant Human IL-15.	

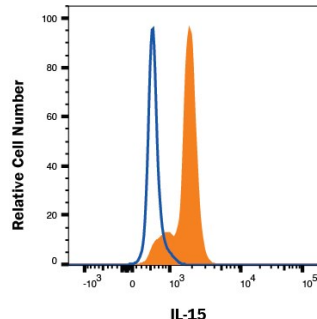
## DATA

### Neutralization



**Cell Proliferation Induced by IL-15 and Neutralization by Human IL-15 Antibody.** Recombinant Human IL-15 (Catalog # [247-ILB](#)) stimulates proliferation in the MO7e human megakaryocytic leukemic cell line in a dose-dependent manner (orange line), as measured by Resazurin (Catalog # [AR002](#)). Proliferation elicited by Recombinant Human IL-15 (5 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-15 Monoclonal Antibody (Catalog # MAB2471). The ND<sub>50</sub> is typically 0.1-0.5 µg/mL.

### N/A



**Detection of IL-15 in Human peripheral blood mononuclear cells (PBMCs) treated with 1 µg/mL LPS for 16 hrs by Flow Cytometry** Human peripheral blood mononuclear cells (PBMCs) treated with 1 µg/mL LPS for 16 hrs were stained with Mouse Anti-Human IL-15 Monoclonal Antibody (Catalog # MAB2471, filled histogram) or isotype control antibody (Catalog # [MAB002](#), open histogram) followed by Fluorescein-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # [F0103B](#)). 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](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS. For liquid material, refer to CoA for concentration.
<b>Shipping</b>	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Interleukin 15 (IL-15) is a widely expressed 14 kDa cytokine that is structurally and functionally related to IL-2 (1-3). Mature human IL-15 shares 70% amino acid sequence identity with mouse and rat IL-15. 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 $\alpha$  (5). It binds with lower affinity to a complex of IL-2 R $\beta$  and the common gamma chain ( $\gamma$ c) which are also subunits of the IL-2 receptor complex (1, 6). IL-15 associates with IL-15 R $\alpha$  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 $\alpha$  are coordinately expressed on the surface of one cell and interact with complexes of IL-2 R $\beta$ / $\gamma$ c on adjacent cells (9). This enables cells to respond to IL-15 even if they do not express IL-15 R $\alpha$  (8, 10). Soluble IL-15-binding forms of IL-15 R $\alpha$  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<sup>+</sup> 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 $\alpha$  complexes induces reverse signaling that promotes cellular adhesion, tyrosine phosphorylation of intracellular proteins, and cytokine secretion by the IL-15/IL-15 R $\alpha$  expressing cells (14, 15).

## References:

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