

Ultra-LEAF™ Purified anti-human IL-18 Antibody

Catalog# / Size	949703 / 100 µg 949704 / 1 mg
Clone	W17071A
Regulatory Status	RUO
Other Names	Interferon-gamma-inducing factor, IGIF, IL-1g, IL18, IL1F4
Isotype	Rat IgG2a, κ

Description

IL-18 was first identified as IFN-β-inducing factor (IGIF). It is a member of the IL-1 family of cytokines and similar to IL-1β, IL-18 is initially synthesized as an inactive precursor without a signal peptide and is cleaved into the mature form by activated caspase 1. Caspase 1-independent maturation of IL-18 is induced by FASL. Mature IL-18 binds directly to the IL-18 receptor alpha chain and then recruits IL-18 receptor beta chain to form a high affinity complex. The high affinity complex recruits MyD88 and leads to IRAK/TRAF6 pathway activation and NF-κB nuclear translocation. IL-18 in combination with IL-12 shows a synergistic effect on IFNβ production. Without costimulation, IL-18 alone does not induce IFNβ production. IL-18 can induce IFNβ production from splenocytes, liver macrophage, T lymphocytes and natural killer cells. IL-18 also enhances the production of GM-CSF and IL-12. IL-18 enhances Th1 cell development by synergizing with IL-12 and promotes Th2 cell differentiation in the presence of TCR activation. IL-18 plays a major role in autoimmune and inflammatory diseases. It has been implicated in many diseases such as eczema, psoriasis, inflammatory bowel disease, metabolic syndromes, hemophagocytic syndrome, sepsis and acute kidney injury. Blocking of IL-18 activity has been an attractive therapeutic approach for autoimmune disease. It has been shown that neutralization of IL-18 has reduced both intestinal IFNβ and TNFα production and resulted in a dose dependent reduction in colitis severity in mice. IL-18 is also able to induce angiogenesis, migration, proliferation and immune escape, and has been associated with cancer. Several publications show that IL-18 gene polymorphism may be risk factors for several cancers.

Product Details

Verified Reactivity	Human
Antibody Type	Monoclonal
Host Species	Rat
Immunogen	Recombinant human IL-18
Formulation	0.2 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is < 0.01 EU/µg of the protein (< 0.001 ng/µg of the protein) as determined by the LAL test.
Preparation	The Ultra-LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.
Concentration	The antibody is bottled at the concentration indicated on the vial, typically between 2 mg/mL and 3 mg/mL. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C. This Ultra-LEAF™ solution contains no preservative; handle under aseptic conditions.
Application	Neut - Quality tested
Recommended Usage	Each lot of this antibody is quality control tested by the neutralization of human IFN-γ production induced by recombinant human IL-18 (Cat. No. 592104) at 0.01 µg/mL on human KG-1a cells. ND ₅₀ range: 1.3 - 10 µg/mL. It is recommended that the reagent be titrated for optimal performance for each application.
RRID	AB_2910518 (BioLegend Cat. No. 949703) AB_2910518 (BioLegend Cat. No. 949704)

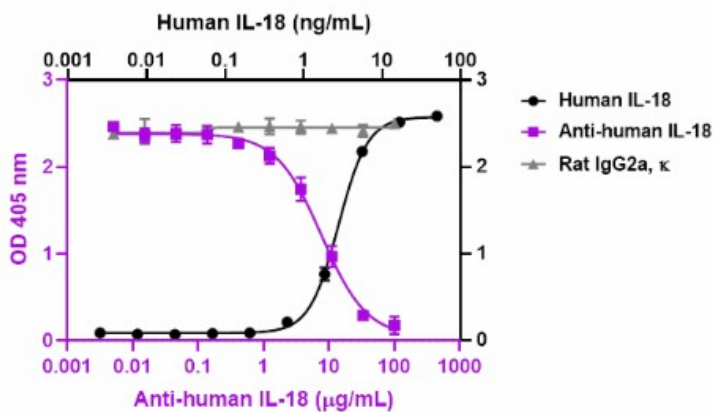
Antigen Details

Structure	Cytokine
Distribution	The major sources of IL-18 are macrophage and dendritic cells. IL-18 precursor is constitutively expressed in endothelial cells, keratinocytes, and intestinal epithelial cells. It is also expressed by renal parenchymal cells (tubular epithelial cells, podocytes, and mesangial cells).
Function	IL-18 is essential for both innate and adaptive immunity. IL-18 induces synthesis of TNF, IL-1, Fas ligand, and several inflammatory chemokines. VEGF-D increases the expression and the secretion of IL-18 from gastric cancer cell lines. IL-18 binding protein (IL-18BP) binds to mature IL-18 with high affinity and prevents its interaction with IL-18Ra. IL-1F7 is a negative regulator of IL-18. IL-18 mRNA is induced by stress and bacteria in adrenal cortex and mouse osteoblasts respectively.
Interaction	CD4 and CD8 lymphocytes, NK cells, splenocytes, smooth muscle cells
Ligand/Receptor	IL-18 receptor (heteromeric complex of alpha and beta subunits)
Cell Type	NK cells, T cells
Biology Area	Adaptive Immunity, Immunology, Innate Immunity
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Okamura H, <i>et al.</i> 1995. <i>Nature</i>. 378:88-91.2. Siegmund B, <i>et al.</i> 2001. <i>Am J Physiol Regul Integr Comp Physiol</i>. 281:R1264-73.3. Rodriguez-Galán MC, <i>et al.</i> 2005. <i>J Immunol</i>. 174:2796-804.4. Alboni S, <i>et al.</i> 2010. <i>J Neuroinflammation</i>. 7:9.5. Dinarello CA, <i>et al.</i> 2013. <i>Front Immunol</i>. 4:289.6. Fabbi M, <i>et al.</i> 2015. <i>J Leukoc Biol</i>. 97:665-75.
Gene ID	3606

Other Formats

Ultra-LEAF™ Purified anti-human IL-18

Product Data



Recombinant human IL-18 (Cat. No. 592104) (black circles) stimulates the production of human IFN- γ in human KG-1a cells. Ultra-LEAF™ purified anti-human IL-18 (clone W17071A) (purple squares) inhibits the effect of recombinant human IL-18 at 0.01 $\mu\text{g}/\text{mL}$ in human KG-1a cells in a dose dependent manner, whereas the GolnVivo™ purified rat IgG2a, κ isotype control (Cat. No. 400562) (gray triangles) does not have the effect. ND₅₀ range: 1.3 - 10 $\mu\text{g}/\text{mL}$.

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