

DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-18/IL-1F4 in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 925008
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human IL-18/IL-1F4 Tyr37-Asp193 Accession # Q14116
<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.

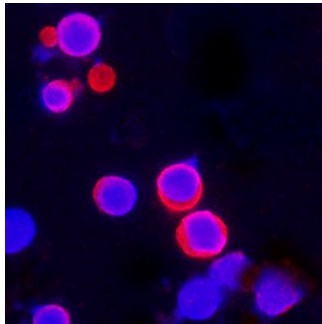
**APPLICATIONS**

**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>Immunocytochemistry</b>	5-25 µg/mL	See Below
<b>Intracellular Staining by Flow Cytometry</b>	0.25 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>ELISA</b>	This antibody functions as an ELISA detection antibody when paired with Rabbit Anti-Human IL-18/IL-1F4 Monoclonal Antibody (Catalog # <a href="#">MAB91243</a> ).  <i>This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human Total IL-18 DuoSet ELISA Kit (Catalog # <a href="#">DY318-05</a>) for convenient development of a sandwich ELISA or the Human Total IL-18/IL-1F4 Quantikine ELISA Kit (Catalog # <a href="#">DL180</a>) for a complete optimized ELISA.</i>	

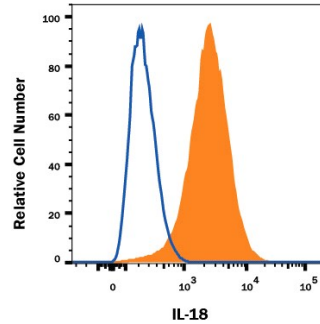
**DATA**

**Immunocytochemistry**



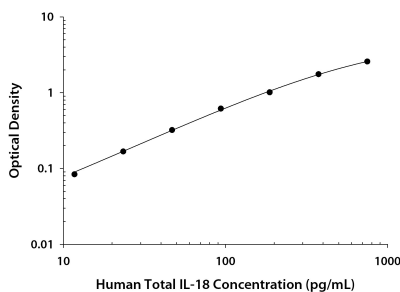
**IL-18/IL-1F4 in Mouse Splenocytes.** IL-18/IL-1F4 was detected in immersion fixed mouse splenocytes stimulated with Cal and PMA using Mouse Anti-Human IL-18/IL-1F4 Monoclonal Antibody (Catalog # MAB2548) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # [NL007](#)) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

**Intracellular Staining by Flow Cytometry**



**Detection of IL-18/IL-1F4 in Human THP-1 cell line by Flow Cytometry.** THP-1 Human acute monocytic leukemia cell line was stained with Mouse Anti-Human IL-18/IL-1F4 Monoclonal Antibody (Catalog # MAB2548, filled histogram) or isotype control antibody (Catalog # [MAB002](#), open histogram), followed by PE-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # [F0102B](#)). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin. View our protocol for [Staining Intracellular Molecules](#).

**ELISA**



**Human IL-18/IL-1F4 ELISA Standard Curve.** Recombinant Human IL-18/IL-1F4 protein was serially diluted 2-fold and captured by Rabbit Anti-Human IL-18/IL-1F4 Monoclonal Antibody (Catalog # [MAB91243](#)) coated on a Clear Polystyrene Microplate (Catalog # [DY990](#)). Mouse Anti-Human IL-18/IL-1F4 Monoclonal Antibody (Catalog # MAB2548) was biotinylated and incubated with the protein captured on the plate. Detection of the standard curve was achieved by incubating Streptavidin-HRP (Catalog # [DY998](#)) followed by Substrate Solution (Catalog # [DY999](#)) and stopping the enzymatic reaction with Stop Solution (Catalog # [DY994](#)).

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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-18 (IL-18), also known as IL-1F4 and IFN- $\gamma$  inducing factor (IGIF), is a member of the IL-1 family of cytokines and is a key molecule in the innate immune response (1). Rhesus IL-18 is synthesized as a 24 kDa proprotein that contains a 36 amino acid (aa) propeptide and a 157 aa mature region (2). Under inflammatory conditions, the propeptide is cleaved by Caspase-1 in the cytoplasm to liberate the mature nonglycosylated 18 kDa monomeric IL-18 (3, 4). Mature rhesus IL-18 shares 96% aa sequence identity with human IL-18 and 60-76% with mouse, rat, canine, feline, and porcine IL-18. IL-18 is secreted by a variety of cell types including macrophages, dendritic cells, and epithelial cells (1, 5). Circulating mature IL-18 is sequestered by soluble IL-18 binding proteins (IL-18 BP) that inhibit IL-18 bioactivity (6). IL-18 interacts with the widely expressed IL-18 R $\alpha$  which then recruits the signaling subunit IL-18 R $\beta$  (7, 8). The IL-1 family member IL-1F7 also binds to IL-18 R $\alpha$  but does not recruit IL-18 R $\beta$  or induce signaling (9). IL-1F7 binds IL-18 BP and enhances its neutralizing effect on IL-18 activity (9). IL-18 synergizes with other cytokines to activate NK, Th1, and Th17 cells and to increase the production of IFN- $\gamma$  (1, 5, 10-12). IL-18 can also promote Th2 cytokine release which reduces the effectiveness of antiviral responses (13, 14). Increased levels of active IL-18 contribute to the severity of autoimmunity and hypertension, while deficiency of IL-18 results in symptoms of metabolic syndrome (1, 5, 15, 16). In cancer, IL-18 stimulates Th1 and NK cells to target tumor cells, but it can also promote angiogenesis, metastasis, and tumor cell immune evasion (11).

**References:**

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