

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-18/IL-1F4 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 925008
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human IL-18/IL-1F4 Tyr37-Asp193 Accession # Q14116
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Intracellular Staining by Flow Cytometry	0.25-1 µg/10 ⁶ cells	THP-1 Human acute monocytic leukemia cell line fixed with paraformaldehyde and permeabilized with saponin

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

Interleukin-18 (IL-18), also known as IL-1F4 and IFN-γ 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 Rα which then recruits the signaling subunit IL-18 Rβ (7, 8). The IL-1 family member IL-1F7 also binds to IL-18 Rα but does not recruit IL-18 Rβ 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-γ (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:

- Arend, W.P. *et al.* (2008) *Immunol. Rev.* **223**:20.
- Giavedoni, L.D. *et al.* (2001) *J. Interferon Cytokine Res.* **21**:173.
- Ghayur, T. *et al.* (1997) *Nature* **386**:619.
- Gu, Y. *et al.* (1997) *Science* **275**:206.
- Boraschi, D. and C.A. Dinarello (2006) *Eur. Cytokine Netw.* **17**:224.
- Novick, D. *et al.* (1999) *Immunity* **10**:127.
- Torigoe, K. *et al.* (1997) *J. Biol. Chem.* **272**:25737.
- Born, T.L. *et al.* (1998) *J. Biol. Chem.* **273**:29445.
- Bufler, P. *et al.* (2002) *Proc. Natl. Acad. Sci. USA* **99**:13723.
- Takeda, K. *et al.* (1998) *Immunity* **8**:383.
- Park, S. *et al.* (2007) *Cell. Mol. Immunol.* **4**:329.
- Yoshimoto, T. *et al.* (1998) *J. Immunol.* **161**:3400.
- Hoshino, T. *et al.* (2001) *J. Immunol.* **166**:7014.
- Iannello, A. *et al.* (2009) *AIDS Rev.* **11**:115.
- Rabkin, S.W. (2009) *Nat. Clin. Pract. Cardiovasc. Med.* **6**:192.
- Netea, M.G. *et al.* (2006) *Nat. Med.* **12**:650.

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