

DESCRIPTION

Species Reactivity	Porcine
Specificity	Detects porcine IL-18/IL-1F4 in direct ELISAs and Western blots. In direct ELISAs, approximately 30% cross-reactivity with recombinant human IL-18 is observed and 10% cross-reactivity with recombinant rat IL-18 and recombinant mouse IL-18 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant porcine IL-18/IL-1F4
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.

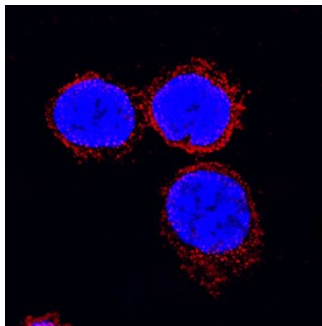
APPLICATIONS

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 Porcine IL-18/IL-1F4 (Catalog # 588-PL)
Immunocytochemistry	5-15 µg/mL	See Below

DATA

Immunocytochemistry



IL-18/IL-1F4 in Porcine PBMCs.
IL-18/IL-1F4 was detected in immersion fixed porcine peripheral blood mononuclear cells (PBMCs) using Goat Anti-Porcine IL-18/IL-1F4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF588) at 15 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

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-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). Porcine IL-18 is synthesized as a 24 kDa proprotein that contains a 35 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 porcine IL-18 shares 88% aa sequence identity with canine and feline IL-18 and 61%-76% with human, mouse, rat, and rhesus 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 α which then recruits the signaling subunit IL-18 R β (7, 8). The IL-1 family member IL-1F7 also binds to IL-18 R α but does not recruit IL-18 R β 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, 11, 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:

1. Arend, W.P. *et al.* (2008) *Immunol. Rev.* **223**:20.
2. Muneta, Y. *et al.* (2000) *Cytokine* **12**:566.
3. Ghayur, T. *et al.* (1997) *Nature* **386**:619.
4. Gu, Y. *et al.* (1997) *Science* **275**:206.
5. Boraschi, D. and C.A. Dinarello (2006) *Eur. Cytokine Netw.* **17**:224.
6. Novick, D. *et al.* (1999) *Immunity* **10**:127.
7. Torigoe, K. *et al.* (1997) *J. Biol. Chem.* **272**:25737.
8. Born, T.L. *et al.* (1998) *J. Biol. Chem.* **273**:29445.
9. Bufler, P. *et al.* (2002) *Proc. Natl. Acad. Sci.* **99**:13723.
10. Takeda, K. *et al.* (1998) *Immunity* **8**:383.
11. Park, S. *et al.* (2007) *Cell. Mol. Immunol.* **4**:329.
12. Yoshimoto, T. *et al.* (1998) *J. Immunol.* **161**:3400.
13. Hoshino, T. *et al.* (2001) *J. Immunol.* **166**:7014.
14. Iannello, A. *et al.* (2009) *AIDS Rev.* **11**:115.
15. Rabkin, S.W. (2009) *Nat. Clin. Pract. Cardiovasc. Med.* **6**:192.
16. Netea, M.G. *et al.* (2006) *Nat. Med.* **12**:650.