Rat IL-18/IL-1F4 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF521

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat IL-18/IL-1F4 in direct ELISAs and Western blots. In Western blots, approximately 35% cross-reactivity with recombinant mouse IL-18 is observed and approximately 10% cross-reactivity with recombinant human IL-18 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant rat IL−18/IL-1F4 His37-Ser194 Accession # P97636
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
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 as a 0.2 µm filtered solution in PBS.

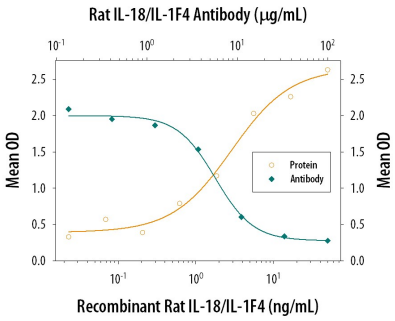
APPLICATIONS

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 Rat IL−18/IL−1F4 (Catalog # 521-RL)
Neutralization	Measured by its ability to neutralize IL−18/IL−1F4-induced IFN−γ secretion in activated mouse T cells [Ahn, H.J. *et al.* (1997) J. Immunol. **159**:2125]. The Neutralization Dose (ND_{50}) is typically 1-3 µg/mL in the presence of 15 ng/mL Recombinant Rat IL−18/IL−1F4 and 0.1 ng/mL Recombinant Mouse IL−12.	

DATA

Neutralization



IFN-γ Secretion Induced by IL-18/IL-1F4 and Neutralization by Rat IL-18/IL-1F4 Antibody. In the presence of Recombinant Mouse IL-12 (0.1 ng/mL, Catalog # 419-ML), Recombinant Rat IL-18/IL-1F4 (Catalog # 521-RL) stimulates IFN-γ secretion in activated mouse T cells in a dose-dependent manner (orange line), as measured by the Mouse IFN-γ Quantikine ELISA Kit (Catalog # MIF00). Under these conditions, IFN-γ secretion elicited by Recombinant Rat IL-18/IL-1F4 (15 ng/mL) is neutralized (green line) by increasing concentrations of Rat IL-18/IL-1F4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF521). The ND_{50} is typically 1-3 µg/mL.

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.** ● 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.

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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). Rat IL-18 is synthesized as a 24 kDa proprotein that contains a 36 amino acid (aa) propeptide and a 158 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 rat IL-18 shares 91% aa sequence identity with mouse IL-18 and 60-64% aa sequence identity with human, canine, feline, porcine, and rhesus macaque 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:

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