Canine IL-12/IL-23 p40 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1969

DESCRIPTION

Species Reactivity	Canine
Specificity	Detects canine IL-12/IL-23 p40 in direct ELISAs and Western blots.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant canine IL-12/IL-23 p40 Ile23-Ser329 Accession # Q28268
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

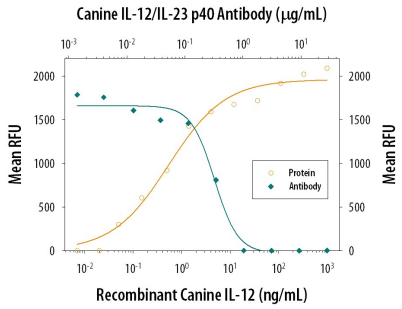
APPLICATIONS

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 Canine IL-12/IL-23 p40 (Catalog # 1969-CL)
Neutralization	Measured by its ability to neutralize IL-12-induced proliferation in PHA-activated human peripheral blood mononuclear cells (PBMC). Yokota, T. *et al.* (1986) Proc. Natl. Acad. Sci. USA **83**:5894. The Neutralization Dose (ND_{50}) is typically 0.1-0.4 µg/mL in the presence of 25 ng/mL Recombinant Canine IL-12.	

DATA

Neutralization



Cell Proliferation Induced by IL-12 and Neutralization by Canine IL-12/IL-23 p40 Antibody. Recombinant Canine IL-12 (Catalog # 2118-CL) stimulates proliferation in PHA-activated human peripheral blood mononuclear cells (PBMC) in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Canine IL-12 (25 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Canine IL-12/IL-23 p40 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1969). The ND_{50} is typically 0.1-0.4 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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Antigen Affinity-purified Polyclonal Goat IgG

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BACKGROUND

Interleukin 12 (IL-12) and IL-23 are secreted heterodimeric glycoproteins belonging to the IL-12 cytokine family. The two cytokines share a common p40 (40 kDa) subunit, which is disulfide-linked with the p35 (35 kDa) subunit in IL-12, and with the p19 (19 kDa) subunit in IL-23. Canine p40 is synthesized as a 329 amino acid (aa) precursor with a 22 aa signal sequence and a 307 aa mature region. It contains a 90 aa fibronectin type III domain and a 75 aa Ig C2-like region. The expression of p40 is induced by substances such as LPS and CpG that activate antigen-presenting cells. Besides being found as a component of IL-12 or IL-23, free p40 monomers and homodimers are also secreted by cells expressing p40. Canine p40 shares 94%, 85%, 84%, 65%, and 65% aa sequence identity with feline, human, porcine, rat and mouse p40, respectively. Cells known to express p40 include macrophages, dendritic cells, monocytes, Langerhans cells, neutrophils, keratinocytes, plasmacytoid dendritic cells, and microglia. From cells that express both the p35 and p40 subunits (dendritic cells, monocytes, and CHO cells), the amount of free p40 secreted is 10-1000 fold more than the heterdimeric IL-12. The high-affinity IL-12 receptor complex that transduces IL-12 signals is composed of a 100 kDa ligand-binding subunit (IL-12 Rβ1) and a 130 kDa signal transducing subunit (IL-12 Rβ2). Similarly, the high-affinity IL-23 signaling receptor complex is composed of the shared IL-12 Rβ1 and the unique IL-23 R, a novel gp130-like protein. Both the monomeric and the dimeric free p40 can bind to the IL-12 Rβ1 and function as antagonists of IL-12 or IL-23. However, the monomeric p40 binds IL-12 Rβ1 with lower affinity and is less potent as an IL-12 antagonist. Homodimeric mouse p40 has also been shown to have agonistic functions similar to IL-12, inducing nitric oxide expression and NFκB activation in mouse primary microglia and peritoneal macrophages. The molecular mechanism for the agonistic effects of homodimeric p40 has not been determined (1-6).

References:

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6. Abdi, K. (2002) Scand. J. Immunol. **5**:1.

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