

DESCRIPTION

Species Reactivity	Canine
Specificity	Detects canine GM-CSF in direct ELISAs and Western blots. In Western blots, approximately 25% cross-reactivity with recombinant rat GM-CSF is observed, approximately 5% cross-reactivity with recombinant feline GM-CSF and recombinant porcine GM-CSF is observed, and less than 1% cross-reactivity with recombinant human GM-CSF and recombinant mouse GM-CSF is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant canine GM-CSF Ala18-Lys144 Accession # P48749.1
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 Canine GM-CSF (Catalog # 1546-GM)
Immunocytochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize GM-CSF-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. <i>et al.</i> (1989) <i>J. Cell Physiol.</i> 140 :323. The Neutralization Dose (ND ₅₀) is typically 2-8 µg/mL in the presence of 15 ng/mL Recombinant Canine GM-CSF.	

DATA

<p>Neutralization</p> <p>Cell Proliferation Induced by GM-CSF and Neutralization by Canine GM-CSF Antibody. Recombinant Canine GM-CSF (Catalog # 1546-GM) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Canine GM-CSF (15 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Canine GM-CSF Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1546). The ND₅₀ is typically 2-8 µg/mL.</p>	<p>Immunocytochemistry</p> <p>GM-CSF in Canine PBMCs. GM-CSF was detected in immersion fixed canine peripheral blood mononuclear cells (PBMCs) treated with Calcium Ionomycin and PMA using Goat Anti-Canine GM-CSF Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1546) 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.</p>
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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

GM-CSF was initially characterized as a factor that can support the *in vitro* colony formation of granulocyte-macrophage progenitors. It is also a growth factor for erythroid, megakaryocyte, and eosinophil progenitors. GM-CSF is produced by a number of different cell types (including T cells, B cells, macrophages, mast cells, endothelial cells, fibroblasts, and adipocytes) in response to cytokine or inflammatory stimuli. On mature hematopoietic cells, GM-CSF is a survival factor for and activates the effector functions of granulocytes, monocytes/macrophages, and eosinophils (1, 2). GM-CSF promotes a Th1 biased immune response, angiogenesis, allergic inflammation, and the development of autoimmunity (3-5). It shows clinical effectiveness in ameliorating chemotherapy-induced neutropenia, and GM-CSF transfected tumor cells are utilized as cancer vaccines (6, 7). The 22 kDa glycosylated GM-CSF, similar to IL-3 and IL-5, is a cytokine with a core of four bundled α -helices (8-10). Mature canine GM-CSF shares 49-57% amino acid sequence identity with mouse and rat GM-CSF and 69-72% with feline, human, and porcine GM-CSF. GM-CSF exerts its biological effects through a heterodimeric receptor complex composed of GM-CSF R α /CD116 and the signal transducing common β chain (CD131) which is also a component of the high-affinity receptors for IL-3 and IL-5 (11, 12). In addition, GM-CSF binds a naturally occurring soluble form of GM-CSF R α (13). The activity of GM-CSF is species specific between human and mouse, although human GM-CSF is active on canine cells (14, 15).

References:

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