

## DESCRIPTION

<b>Species Reactivity</b>	Canine
<b>Specificity</b>	Detects canine IL-1 $\beta$ /IL-1F2 in Western blots. In Western blots, approximately 40% cross-reactivity with recombinant feline IL-1 $\beta$ is observed, 10% cross-reactivity with recombinant human IL-1 $\beta$ , recombinant rhesus macaque IL-1 $\beta$ , recombinant equine IL-1 $\beta$ , and recombinant porcine IL-1 $\beta$ is observed, and 5% cross-reactivity with recombinant mouse IL-1 $\beta$ , recombinant rat IL-1 $\beta$ , and recombinant cotton rat IL-1 $\beta$ is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant canine IL-1 $\beta$ /IL-1F2 Asp114-Ser265 Accession # Q28292
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

## 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
<b>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Cotton Rat IL-1 $\beta$ /IL-1F2 (Catalog # 1009-CL)
<b>Intracellular Staining by Flow Cytometry</b>	0.25 $\mu$ g/10 <sup>6</sup> cells	Canine peripheral blood mononuclear cells treated with LPS, fixed with paraformaldehyde, and permeabilized with saponin

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

IL-1 is a name that designates two pleiotropic cytokines, IL-1 $\alpha$  (IL-1F1) and IL-1 $\beta$  (IL-1F2), which are the products of distinct genes. IL-1 $\alpha$  and IL-1 $\beta$  are structurally related polypeptides that share approximately 22% amino acid (aa) identity in dog. Both proteins are produced by a wide variety of cells in response to inflammatory agents, infections, or microbial endotoxins. While IL-1 $\alpha$  and IL-1 $\beta$  are regulated independently, they bind to the same receptor and exert identical biological effects. IL-1 RI binds directly to IL-1 $\alpha$  or IL-1 $\beta$  and then associates with IL-1 R accessory protein (IL-1 R3/IL-1 R AcP) to form a high-affinity receptor complex that is competent for signal transduction. IL-1 RII has high affinity for IL-1 $\beta$  but functions as a decoy receptor and negative regulator of IL-1 $\beta$  activity. IL-1ra functions as a competitive antagonist by preventing IL-1 $\alpha$  and IL-1 $\beta$  from interacting with IL-1 RI (1 - 4). The canine IL-1 $\beta$  cDNA encodes a 266 aa precursor. A 114 aa propeptide is cleaved intracellularly by the cysteine protease IL-1 $\beta$ -converting enzyme (Caspase-1/ICE) to generate the active cytokine (5, 6). The 17 kDa mature canine IL-1 $\beta$  shares 68-78% aa sequence identity with cotton rat, equine, feline, human, mouse, porcine, rat, and rhesus macaque IL-1 $\beta$ .

### References:

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