

## DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat IL-1 $\beta$ /IL-1F2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 5% cross-reactivity with recombinant human IL-1 $\alpha$ , recombinant mouse IL-1 $\alpha$ , and recombinant rat IL-1 $\alpha$ is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 38139
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant rat IL-1 $\beta$ /IL-1F2 Val117-Ser268 Accession # Q63264
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m 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 $\mu$ m filtered solution in PBS.

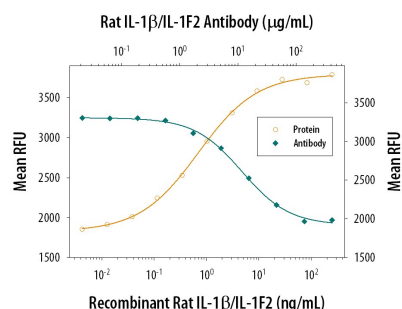
## APPLICATIONS

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Immunocytochemistry</b>	8-25 $\mu$ g/mL	Immersion fixed rat splenocytes activated with LPS
<b>Neutralization</b>	Measured by its ability to neutralize IL-1 $\beta$ /IL-1F2-induced proliferation in the D10.G4.1 mouse helper T cell line. Symons, J. A. <i>et al.</i> (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M. J. <i>et al.</i> (eds): IRL Press. 272. The Neutralization Dose (ND <sub>50</sub> ) is typically 10-30 $\mu$ g/mL in the presence of 4 ng/mL Recombinant Rat IL-1 $\beta$ /IL-1F2.	

## DATA

### Neutralization



**Cell Proliferation Induced by IL-1 $\beta$ /IL-1F2 and Neutralization by Rat IL-1 $\beta$ /IL-1F2 Antibody.** Recombinant Rat IL-1 $\beta$ /IL-1F2 (Catalog # Catalog # 501-RL) stimulates proliferation in the the D10.G4.1 mouse helper T cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat IL-1 $\beta$ /IL-1F2 (4 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Rat IL-1 $\beta$ /IL-1F2 Monoclonal Antibody (Catalog # MAB501). The ND<sub>50</sub> is typically 10-30  $\mu$ g/mL.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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, IL1B), which are the products of distinct genes. IL-1 $\alpha$  and IL-1 $\beta$  are structurally related polypeptides that share approximately 26% amino acid (aa) identity in rat. 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. Intracellular cleavage of the IL-1 beta precursor by Caspase-1/ICE is a key step in the inflammatory response. The 17 kDa molecular weight mature rat IL-1 $\beta$  shares 90% aa sequence identity with cotton rat and mouse and 67%-78% with canine, equine, feline, human, porcine, and rhesus macaque IL-1 $\beta$ . IL-1 $\beta$  functions in a central role in immune and inflammatory responses, bone remodeling, fever, carbohydrate metabolism, and GH/IGF-I physiology. IL-1 beta dysregulation is implicated in many pathological conditions including sepsis, rheumatoid arthritis, inflammatory bowel disease, acute and chronic myelogenous leukemia, insulin-dependent diabetes mellitus, atherosclerosis, neuronal injury, and aging-related diseases.