

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                                           |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Rat                                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects rat IL-1 $\beta$ in direct ELISAs and Western blots. In these formats, this antibody shows approximately 100% cross-reactivity with recombinant mouse (rm) IL-1 $\beta$ and rcrlIL-1 $\beta$ and no cross-reactivity with rflIL-1 $\beta$ , rhIL-1 $\beta$ , or rrmIL-1 $\beta$ . |
| <b>Source</b>             | Monoclonal Mouse IgG <sub>1</sub> Clone # 38123                                                                                                                                                                                                                                           |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                                |
| <b>Immunogen</b>          | <i>E. coli</i> -derived recombinant rat IL-1 $\beta$<br>Val117-Ser268<br>Accession # Q63264                                                                                                                                                                                               |
| <b>Conjugate</b>          | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 nm                                                                                                                                                                                                           |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.               |

## 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.

**Western Blot** Optimal dilution of this antibody should be experimentally determined.

## PREPARATION AND STORAGE

**Shipping** The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

## 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.

## PRODUCT SPECIFIC NOTICES

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