

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Rat                                                                                                                                                                                                                                                                                                                            |
| <b>Specificity</b>                                                                                                                                                                                      | Detects rat IL-1 $\alpha$ /IL-1F1 in direct ELISAs and Western blots. In direct ELISAs, less than 50% cross-reactivity with recombinant mouse IL-1 $\alpha$ /IL-1F1 and recombinant cotton rat IL-1 $\alpha$ /IL-1F1 is observed, and less than 15% cross-reactivity with recombinant human IL-1 $\alpha$ /IL-1F1 is observed. |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Goat IgG                                                                                                                                                                                                                                                                                                            |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                                                                                                                                                                                                                                                      |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant rat IL-1 $\alpha$ /IL-1F1<br>Ser115-Ser270<br>Accession # P16598                                                                                                                                                                                                                           |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 594<br>Excitation Wavelength: 590 nm<br>Emission Wavelength: 617 nm                                                                                                                                                                                                                                                |
| <b>Formulation</b>                                                                                                                                                                                      | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide                                                                                                                                                                                                                                                                   |
| *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.

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| <b>Neutralization</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>   | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## BACKGROUND

Interleukin 1 (IL-1) is a name that designates two proteins, IL-1 $\alpha$  and IL-1 $\beta$ , which are the products of distinct genes, but which show approximately 25% amino acid (aa) sequence identity and which recognize the same cell surface receptors. Although IL-1 production is generally considered to be a consequence of inflammation, evidence suggests that IL-1 is also temporally upregulated during bone formation and the menstrual cycle and can be induced in response to nervous system stimulation. In response to classic stimuli produced by inflammatory agents, infections or microbial endotoxins, a dramatic increase in the production of IL-1 by macrophages and various other cells is seen. Cells in particular known to produce IL-1 include osteoblasts, monocytes, macrophages, keratinocytes, Kupffer cells, hepatocytes, thymic and salivary gland epithelium, Schwann cells, fibroblasts, and glia (oligodendroglia, astrocytes, and microglia).

IL-1 $\alpha$  and IL-1 $\beta$  are both synthesized as 31 kDa precursors that are subsequently cleaved into proteins with molecular weights of approximately 17,000 Da. Neither precursor contains a typical hydrophobic signal peptide sequence and most of the precursor form of IL-1 $\alpha$  remains in the cytosol of cells, although there is evidence for a membrane-bound form of the precursor form of IL-1 $\alpha$ . The IL-1 $\alpha$  precursor reportedly shows full biological activity in the EL-4 assay. Among various species, the aa sequence of mature IL-1 $\alpha$  is conserved 60-70% and human IL-1 has been found to be biologically active on murine cell lines. Both forms of IL-1 bind to the same receptors, designated type I and type II. Evidence suggests that only the type I receptor is capable of signal transduction and that the type II receptor may function as a decoy, binding IL-1 and thus preventing binding of IL-1 to the type I receptor.

## PRODUCT SPECIFIC NOTICES

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