

#### DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Equine                                                                                                                                                                                                                                                                      |
| <b>Specificity</b>        | Detects equine IL-1ra/IL-1F3 in ELISAs and Western blots. In sandwich immunoassays, less than 20% cross-reactivity with recombinant mouse IL-1ra is observed, less than 5% cross-reactivity with recombinant rat IL-1ra is observed, less than 2% cross-reactivity          |
| <b>Source</b>             | Polyclonal Goat IgG                                                                                                                                                                                                                                                         |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | <i>E. coli</i> -derived recombinant equine IL-1ra/IL-1F3<br>His26-Gln177<br>Accession # O18999                                                                                                                                                                              |
| <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<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.

|                                                |                                                                        |
|------------------------------------------------|------------------------------------------------------------------------|
| <b>ELISA Capture (Matched Antibody Pair)</b>   | Optimal dilution of this antibody should be experimentally determined. |
| <b>ELISA Detection (Matched Antibody Pair)</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>                            | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunocytochemistry</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

Secreted equine IL-1 receptor antagonist (IL-1ra) is a presumably 22-25 kDa glycoprotein produced by variety of cell types that antagonizes IL-1 activity (1-3). It is a member of the IL-1 family of proteins that includes IL-1 $\alpha$  and IL-1 $\beta$ . Although there is little amino acid (aa) identity (<30%) among the three IL-1 family members, all molecules bind to the same receptors, all show a  $\beta$ -trefoil structure, and all are believed to have evolved from a common ancestral gene (1-4). Equine IL-1ra is synthesized as a 177 aa precursor that contains a 25 aa signal sequence plus a 152 aa mature region. There is one intrachain disulfide bond and one potential N-linked glycosylation site (3, 5, 6). Mature equine sIL-1ra is 78%, 78%, 80%, 82%, and 76% aa identical to mature mouse, human, porcine, canine and bovine IL-1ra, respectively. In human, three non-secreted IL-1ra isoforms have also been identified. It is unknown if such an analogous situation exists in equine. Cells known to secrete IL-1ra include fibroblasts, vascular smooth muscle cells, intestinal columnar epithelium, chondrocytes, macrophages, mast cells, neutrophils and hepatocytes.

There are two type I transmembrane glycoprotein receptors for IL-1ra. The first is the bioactive 80 kDa type I IL-1 receptor (IL-1 RI), and the second is the inert (decoy) 65 kDa type II IL-1 receptor. IL-1ra binding to IL-1 RI competitively blocks IL-1 ( $\alpha$  or  $\beta$ ) binding to the same receptor. This results in receptor ligation without activation (1, 7). The type II IL-1 receptor is inert, and any binding of IL-1ra not only fails to block co-existing IL-1 activity, but may actually potentiate it by removing an IL-1 antagonist. Functionally, all activities attributed to IL-1ra are explained by its role as a competitive inhibitor of IL-1 binding to IL-1 RI (1, 2, 8, 9).

#### PRODUCT SPECIFIC NOTICES

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