

**DESCRIPTION**

|                                     |   |        |  |
|-------------------------------------|---|--------|--|
| <b>Source</b>                       | Human embryonic kidney cell, HEK293-derived human IL-1 RI protein |        |  |
|                                     | Human IL-1 RI<br>(Asp21-Lys336)<br>Accession # P14778.1           | IEGRMD | Human IgG <sub>1</sub> Fc<br>(Pro100-Lys330) |
|                                     | N-terminus  |        | C-terminus                                   |
| <b>N-terminal Sequence Analysis</b> | Asp21   |        |  |
| <b>Structure / Form</b>             | Disulfide-linked Homodimer  |        |  |
| <b>Predicted Molecular Mass</b>     | 63 kDa  |        |  |

**SPECIFICATIONS**

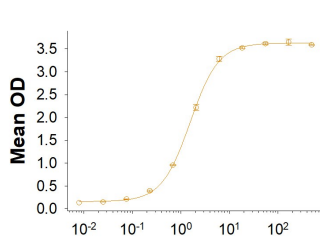
|                        |   |
|------------------------|---|
| <b>SDS-PAGE</b>        | 80-90 kDa, under reducing conditions.   |
| <b>Activity</b>        | Measured by its binding ability in a functional ELISA.<br>When Recombinant Human IL-1 RI Fc Chimera (Catalog # 11085-RI) is immobilized at 0.5 µg/mL (100 µL/well), Recombinant Human IL-1β/IL-1F2 (Catalog # 201-LB) binds with an ED <sub>50</sub> of 0.600-5.40 ng/mL. |
| <b>Endotoxin Level</b> | <1.0 EU per 1 µg of the protein by the LAL method.  |
| <b>Purity</b>          | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.  |
| <b>Formulation</b>     | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.   |

**PREPARATION AND STORAGE**

|                                |   |
|--------------------------------|---|
| <b>Reconstitution</b>          | Reconstitute at 500 µg/mL in 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>• 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

**DATA**

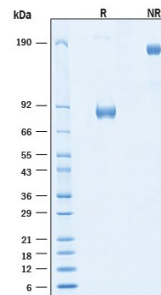
**Binding Activity**



**Recombinant Human IL-1 RI Fc Chimera Protein Binding Activity.** When Recombinant Human IL-1 RI Fc Chimera Protein (Catalog # 11085-RI) is immobilized at 0.5 µg/mL (100 µL/well), Recombinant Human IL-1β/IL-1F2 (Catalog # 201-LB) binds with an ED<sub>50</sub> of 0.600-5.40 ng/mL.

Recombinant Human IL-1β/IL-1F2 (ng/mL)

**SDS-PAGE**



**Recombinant Human IL-1 RI Fc Chimera Protein SDS-PAGE.** 2 µg/lane of Recombinant Human IL-1 RI Fc Chimera Protein (Catalog # 11085-RI) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 80-90 kDa and 160-180 kDa, respectively.

**BACKGROUND**

The type I IL-1 receptor (IL-1 RI, designated IL-1 R1 and CD121a) is one of at least nine members of the IL-1 R family within the Toll/IL-1 R (TIR) superfamily (1 - 3). IL-1 RI is an 80 kDa type I transmembrane (TM) protein that binds the pleiotropic cytokines IL-1 $\alpha$  and IL-1 $\beta$ , plus the IL-1 receptor antagonist (IL-1 Ra). Signal transduction requires complex formation with the IL-1 R accessory protein (IL-1 R AcP/IL-1 R3), another type I TM protein (1, 2). This complex recruits the adaptor protein MyD88, to initiate signaling in the NF $\kappa$ B pathway (4, 5). Human IL-1 RI cDNA encodes a 569 amino acid (aa) protein that contains a 17 aa signal sequence, a 319 aa extracellular domain (ECD) with three C2-type Ig-like domains, a 20 aa TM domain and a 213 aa cytoplasmic region with a TIR domain. Within the ECD domain, human IL-1 RI shares 63% and 64% aa identity with mouse and rat IL-1 RI, respectively. The role of IL-1 in inflammation is under several levels of control, including expression and activation of IL-1 $\alpha$  and IL-1 $\beta$ , expression of IL-1 RI and its accessory and adaptor proteins, and inhibitory IL-1 R isoforms and decoys (1 - 5). IL-1 RI is expressed predominantly by T cells, fibroblasts, and endothelial cells and mediates acute phase inflammatory responses including fever (1, 2, 5, 6).

**References:**

1. Boraschi, D. & A. Tagliabue (2006) *Vitam. Horm.* **74**:229.
2. Dinarello, C.A. (2002) *Clin. Exp. Rheumatol.* **20**:S1.
3. Hart, R.P. *et al.* (1993) *J. Neuroimmunol.* **44**:49.
4. Brikos, C. *et al.* (2007) *Mol. Cell. Proteomics* **6**:1551.
5. Gasse, P. *et al.* (2007) *J. Clin. Invest.* **117**:3786.
6. Ching, S. *et al.* (2007) *J. Neurosci.* **27**:10476.