

**DESCRIPTION**

**Source** Human embryonic kidney cell, HEK293-derived  
Ser21-Glu359, with a C-terminal 6-His tag  
Accession # Q9NPH3

**N-terminal Sequence Analysis** Ser21

**Predicted Molecular Mass** 40 kDa

**SPECIFICATIONS**

**SDS-PAGE** 55-65 kDa, reducing conditions

**Activity** Measured by its ability to inhibit IL-1 $\alpha$ -induced IL-8 secretion in HepG2 human hepatocellular carcinoma cells. The ED<sub>50</sub> for this effect is typically 0.8-4  $\mu$ g/mL in the presence of 1  $\mu$ g/mL of recombinant human (rh) IL-1 R2 Fc Chimera and 50 pg/mL rhIL-1 $\alpha$ .

**Endotoxin Level** <0.10 EU per 1  $\mu$ g of the protein by the LAL method.

**Purity** >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2  $\mu$ m filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

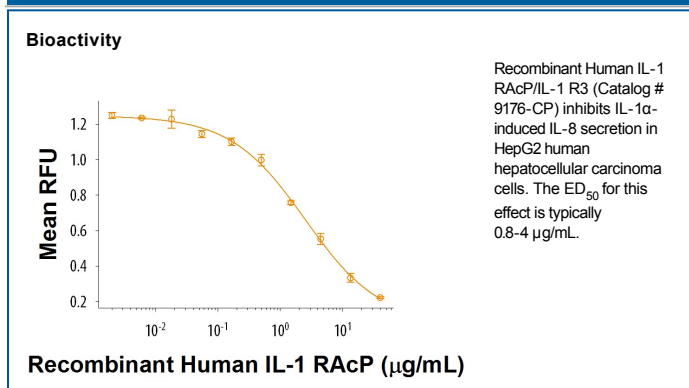
**Reconstitution** Reconstitute at 200  $\mu$ g/mL in PBS.

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

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**



**BACKGROUND**

IL-1 Receptor Accessory Protein (IL-1 RAcP), also known as IL-1 R3, is a ubiquitously expressed 70-90 kDa member of the Interleukin-1 receptor family of proteins (1). It serves as a non-ligand-binding component of the receptors for IL-1 $\alpha$ , IL-1 $\beta$ , IL-33, and IL-36 (2-4). It is a subunit of the functional signaling complex with IL-1 RI and associates with IL-1 RII in a non-signaling receptor complex (2, 5). In addition, it interacts with ST2/IL-1 R4 on mast cells and Th2 cells to create a functional IL-33 receptor complex (3). IL-1 RAcP also functions as a co-receptor for IL-36 $\alpha$ /IL-1F6, IL-36 $\beta$ /IL-1F8, and IL-36 $\gamma$ /IL-1F9 (4). Mature human IL-1 RAcP consists of a 347 amino acid (aa) extracellular domain (ECD) with three Ig-like domains, a 21 aa transmembrane segment, and a 182 aa cytoplasmic domain (2). Within the ECD, human IL-1 RAcP shares 86% aa sequence identity with mouse and rat IL-1 RAcP. Alternative splicing generates two secreted decoy receptor isoforms and an isoform with a substituted cytoplasmic domain (6-8). When present with soluble IL-1 RII, soluble IL-1 RAcP increases the IL-1 binding affinity of IL-1 RII more than 100-fold, thus neutralizing the effects of IL-1 (9). Neuronal IL-1 RAcP interacts trans-synaptically with PTP $\sigma$  and can induce excitatory pre- and post-synaptic development (10).

**References:**

1. Boraschi, D. and A. Tagliabue (2013) *Semin. Immunol.* **25**:394.
2. Greenfeder, S.A. *et al.* (1995) *J. Biol. Chem.* **270**:13757.
3. Chackerian, A.A. *et al.* (2007) *J. Immunol.* **179**:2551.
4. Towne, J.E. *et al.* (2004) *J. Biol. Chem.* **279**:13677.
5. Lang, D. *et al.* (1998) *J. Immunol.* **161**:6871.
6. Lu, H.-L. *et al.* (2008) *Mol. Immunol.* **45**:1374.
7. Jensen, L.E. *et al.* (2000) *J. Immunol.* **164**:5277.
8. Jensen, L.E. and A.S. Whitehead (2003) *Cell. Signal.* **15**:793.
9. Smith, D.E. *et al.* (2003) *Immunity* **18**:87.
10. Yoshida, T. *et al.* (2012) *J. Neurosci.* **32**:2588.