

# Recombinant Equine Interleukin-1 Receptor Antagonist Protein ( Equine IL-1RA)

## Product Information

Product Name	Cat#	Size
Recombinant Equine Interleukin-1 Receptor Antagonist Protein ( Equine IL-1RA)	90185ES08	5 µg
	90185ES60	100 µg
	90185ES76	500 µg

## Product Description

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. 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. 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. 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. 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.

## Product Properties

<b>Synonyms</b>	IL-1RN, IRAP
<b>Accession</b>	O18999
<b>GeneID</b>	100034236
<b>Source</b>	E.coli-derived Equine IL-1RA, His26-Gln177.
<b>Molecular Weight</b>	Approximately 17.4 kDa.
<b>AA Sequence</b>	HPLGKRPCCK QAFRIWDVNQ KTFYMRNNQL VAGYLQESNT KLQEKIDVVP IEPDALFLGL HGRKLCLACV KSGDEIRFQL EAVNITDLSK NKEENKRFTF IRSNSGPTTS FESAACPGWF LCTAQEADRP VSLTNKPKES FMVTKFYLQE DQ
<b>Tag</b>	None
<b>Physical Appearance</b>	Sterile Filtered White lyophilized (freeze-dried) powder.
<b>Purity</b>	> 95% by SDS-PAGE and HPLC analyses.
<b>Biological Activity</b>	The ED <sub>50</sub> as determined by inhibiting IL-1α-dependent proliferation of murine D10S cells is less than 3.0 µg/mL, corresponding to a specific activity of > 333 IU/mg in the presence of 50 pg/mL rHuIL-1α. Fully biologically active when compared to standard.

---

<b>Endotoxin</b>	Lyophilized from a 0.2 $\mu$ m filtered concentrated solution in PBS, pH 7.4. We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom.
<b>Formulation</b>	Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq -20^{\circ}\text{C}$ . Further dilutions should be made in appropriate buffered solutions.

---

### **Shipping and Storage**

The products are shipped with ice pack and can be stored at  $-20^{\circ}\text{C}$  to  $-80^{\circ}\text{C}$  for 1 year.

Recommend to aliquot the protein into smaller quantities when first used and avoid repeated freeze-thaw cycles.

### **Cautions**

1. Avoid repeated freeze-thaw cycles.
2. For your safety and health, please wear lab coats and disposable gloves for operation.
3. For research use only!