

Recombinant Rat Interleukin-1 Receptor Antagonist Protein (Rat IL-1RA)

Product Information

Product Name	Cat#	Size
Recombinant Rat Interleukin-1 Receptor Antagonist Protein (Rat IL-1RA)	90166ES60	100 µg
	90166ES76	500 µg

Product Description

Interleukin 1 alpha (IL-1 alpha), IL-1 beta, and IL-1 receptor antagonist (IL-1ra) are members of the IL-1 family. IL-1 alpha and IL-1 beta are agonists that bind the functional IL-1 receptor I (IL-1 RI), which then recruits the IL-1 receptor accessory protein (IL-1 R AcP/IL-1 R3) and initiates signal transduction pathways that include the NF-kappa B, JNK/AP-1, and p38 MAP kinase pathways. Both IL-1 alpha and IL-1 beta also bind the non-signaling IL-1 RII that functions as a decoy receptor. IL-1ra is a receptor antagonist that binds both IL-1 RI and II with equal affinity as the IL-1 alpha and beta. Binding of IL-1ra to IL-1 RI does not initiate signal transduction pathways. IL-1 alpha and beta are pro-inflammatory cytokines that play an important role in host defense. The imbalance between IL-1 (alpha and beta) and IL-1ra can influence the development of various pathologic conditions associated with chronic inflammation and tissue destruction. Pre-clinical and clinical studies have indicated that IL-1ra may have therapeutic potential for the treatment of sepsis, rheumatoid arthritis and chronic myelogenous leukemia.

Rat IL-1ra cDNA encodes a 178 amino acid (aa) residues secreted protein with a 26 aa signal peptide. Although intracellular isoforms of human IL-1ra that are transcribed from the same gene using different promoters have been described, analogous rat isoforms have not been reported. Rat IL-1ra shares 89% and 73% aa sequence homology with mouse and human IL-1ra, respectively. Secreted IL-1ra has been shown to be expressed by monocytes, macrophages, neutrophils, fibroblasts and hepatocytes.

Product Properties

Synonyms	IL-1RN, IRAP, IL1 Inhibitor
Accession	P25086
GeneID	60582
Source	E.coli-derived Rat IL-1RA, His27-Gln178.
Molecular Weight	Approximately 17.4 kDa.
AA Sequence	HPAGKRPCKM QAFRIWDTNQ KTFYLRNNQL IAGYLQGPNT KLEEKIDMVP IDFRNVFLGI HGGKLCCLSCV KSGDDTKLQL EEVNITDLNK NKEEDKRFTF IRSETGPPTS FESLACPGWF LCTTLEADHP VSLTNTPKPEP CTVTKFYFQE DQ
Tag	None
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Purity	> 96% by SDS-PAGE and HPLC analyses.
Biological Activity	The ED50 as determined by inhibiting IL-1 α -dependent proliferation of murine D10S cells is less than 150 ng/mL, corresponding to a specific activity of > 6.7 \times 10 ³ IU/mg in the presence of 50 pg/mL rRtIL-1 α . Fully biologically active when compared to standard.
Endotoxin	< 1.0 EU per 1µg of the protein by the LAL method.
Formulation	Lyophilized from a 0.2 µm 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.

Reconstitution

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°C to -80°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!