

DESCRIPTION

Source *E. coli*-derived
His27-Gln178, with an N-terminal Met
Accession # P25086.1

N-terminal Sequence Analysis Met

Predicted Molecular Mass 17.5 kDa

SPECIFICATIONS

Activity Measured by its ability to inhibit IL-1 α -dependent proliferation in D10.G4.1 mouse helper T cells. Symons, J.A. *et al.* (1987) in *Lymphokines and Interferons, a Practical Approach*. Clemens, M.J. *et al.* (eds): IRL Press. 272.
The ED₅₀ for this effect is 38-150 ng/mL in the presence of 50 pg/mL of rIL-1 α .

Endotoxin Level <0.01 EU per 1 μ g of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS and DTT. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/mL in sterile 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.

BACKGROUND

Interleukin 1 α (IL-1 α), IL-1 β , and IL-1 receptor antagonist (IL-1ra) are members of the IL-1 family. IL-1 α and IL-1 β 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- κ B, JNK/AP-1, and p38 MAP kinase pathways. Both IL-1 α and IL-1 β 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 α and β . Binding of IL-1ra to IL-1 RI does not initiate signal transduction pathways. IL-1 α and β are pro-inflammatory cytokines that play an important role in host defense. The imbalance between IL-1 (α and β) 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 (1, 2).

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 (1, 2).

References:

1. Dinarello, C.A. (1996) *Blood* **87**:2095 (review).
2. Arend, W.P. (2002) *Growth Factor Reviews* **23**:323 (review).