

IL-1ra

Interleukin 1 receptor antagonist human, recombinant, *E. coli*

Cat. No.	Amount
PR-460	100 µg

For *in vitro* use only
Quality guaranteed for 12 months
Store at -20°C

Avoid freeze / thaw cycles

Form

Lyophilized with no additives.

Solubility

It is recommended to reconstitute the lyophilized IL-1 ra in sterile bidest H₂O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

Activity

ED₅₀: 0.5 ng/ml, corresponding to a specific activity of 2 x 10⁶ IU/mg determined by the dose-dependent stimulation of murine D10S cells.

Molecular Weight

17 kDa

Purity

≥ 95% by SDS-PAGE and RP-HPLC

Description

Interleukin-1 receptor antagonist (IL-1ra) is a member of the IL-1 family. Endogenous IL-1ra is produced in numerous animal disease models as well as in human autoimmune and chronic inflammatory diseases. It binds to IL-1 receptors in competition with IL-1, but does not elicit intracellular response from this binding. Its role in counteracting the proinflammatory effects of IL-1 is being studied by numerous research groups.

IL-4 and IL-13 have been shown to amplify the stimulatory effect of IL-1β on the production of soluble and intracellular forms of IL-1ra.

The regulated expression of IL-1ra in various cell types has been shown to be influenced by cytokines. In synovial fibroblasts the synthesis of IL-1ra is markedly enhanced by IL-1, TNF-α, or PDGF.

Recombinant human IL-1ra produced in *E. coli* is a non-glycosylated, N-terminal methionyl form of the human naturally-occurring polypeptide chain containing 153 amino acids and having a molecular mass of 17 kDa.

Recombinant IL-1ra is purified by proprietary chromatographic techniques.

Amino acid sequence

The sequence of the first five N-terminal amino acids was determined and was found to be

Met-Arg-Pro-Ser-Gly.

Selected References:

- Jie *et al.* (2004) SEB combined with IL-1ra could prolong the survival of the rat allografts in high-risk corneal transplantation. *Transplant. Proc.* **36**:3267.
- Jonsen *et al.* (2004) Analysis of HLA DR, HLA DQ, C4A, FcγRIIIa, FcγRIIIb, MBL, and IL-1Ra allelic variants in Caucasian systemic lupus erythematosus patients suggests an effect of the combined FcγRIIIa R/R and IL-1Ra 2/2 genotypes on disease susceptibility. *Arthritis Res. Ther.* **6**:R557.
- Porzio *et al.* (2004) Mucosal delivery of anti-inflammatory IL-1Ra by sporulating recombinant bacteria. *BMC Biotechnol.* **4**:27.
- Capper *et al.* (2004) Interleukin (IL)-10, IL-1ra and IL-12 profiles in active and quiescent systemic lupus erythematosus: could longitudinal studies reveal patient subgroups of differing pathology? *Clin. Exp. Immunol.* **138**:348.
- Furst *et al.* (2004) Updated consensus statement on biological agents, specifically tumour necrosis factor alpha (TNFα) blocking agents and interleukin-1 receptor antagonist (IL-1ra), for the treatment of rheumatic diseases. *Ann. Rheum. Dis.* **63** Suppl 2:ii2.
- Moosig *et al.* (2004) IL-1RA in refractory systemic lupus erythematosus. *Lupus.* **13**:605.