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Human IL-1RA Recombinant Protein

20 µg

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For Research Use Only. Not for Use in Diagnostic Procedures.**MW (kDa):**
17.3**UniProt ID:**
#P18510**Entrez-Gene Id:**
3557

Background

The founding members of the interleukin-1 (IL-1) superfamily include pro-inflammatory cytokines IL-1 α and IL-1 β , and a third protein that acts as an IL-1 receptor antagonist (IL-1RA). At least six similar proteins have been recently identified, including a homolog of IL-1RA (IL1F5). The three better-characterized proteins (IL-1a, IL-1b, and IL-1RA) are mainly expressed in macrophages, monocytes, and dendritic cells. IL-1a and IL-1b act as potent inflammatory cytokines that help regulate host defense and immune responses (1). Binding of these pro-inflammatory cytokines to an IL-1 receptor recruits adaptor proteins (such as IRAK) to the receptor. Phosphorylation of these adaptor proteins promotes downstream signaling cascades associated with the immune response (2). Altered expression of both IL-1a and IL-1b is associated with an extensive list of human disorders, including Alzheimer's disease, rheumatoid arthritis, psoriasis, and various forms of cancer (3,4). IL-1RA acts as an anti-inflammatory cytokine, binding the IL-1 receptor to limit the response to inflammation (5). Because it plays a key role in regulating the inflammatory response, recombinant IL-1RA is a therapeutic agent used in the treatment of diseases, such as rheumatoid arthritis. Alternatively, mutation of the corresponding *IL-1RA* gene may be associated with susceptibility to the development of specific cancers (6).

Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 µg hIL-1RA.

Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

Source / Purification

Recombinant human IL-1RA was expressed in *E. coli* and is supplied in a lyophilized form.

Bioactivity

The bioactivity of recombinant hIL-1RA was determined in an IL-1 α induced D10.G4.1 cell proliferation assay. The ED₅₀ of each lot is less than or equal to 50 ng/mL.

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Background References

1. Pelegrin, P. (2008) *Drug News Perspect* 21, 424-33.
2. Ringwood, L. and Li, L. (2008) *Cytokine* 42, 1-7.
3. Griffin, W.S. and Mrak, R.E. (2002) *J Leukoc Biol* 72, 233-8.
4. Kamangar, F. et al. (2006) *Cancer Epidemiol Biomarkers Prev* 15, 1920-8.
5. Arend, W.P. (2002) *Cytokine Growth Factor Rev* 13, 323-40.
6. Sehouli, J. et al. (2002) *Anticancer Res* 22, 3421-4.

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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