Store at -20°C

Human IL-1α Recombinant Protein

#62643

10 µg

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Entrez-Gene ID #3552
UniProt ID #P01583

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Background: Interleukin 1 alpha (IL-1α) belongs to the IL-1 family of cytokines with 11 members including IL-1β. IL-1α is expressed in many cell types of both hematopoietic and non-hematopoietic origins under steady state, and its expression can be increased in response to appropriate stimuli (1,2). Like IL-1β, IL-1α is also synthesized as a precursor (pro-IL-1α) and can be cleaved into smaller mature forms. However, both pro-IL-1α and the cleaved form of IL-1α are biologically active and can activate the signaling pathway through the membrane receptor IL-1R1. IL-1α is active both as a secreted form and as a membrane-bound form. Due to such characteristics, passive leakage of IL-1α from dying cells can activate inflammation, leading some researchers to consider IL-1α as a key "alarmin in the cell" that alerts the host to damage or injury (3,4). In addition, IL-1α can also enter the nucleus to modulate transcription (5,6).

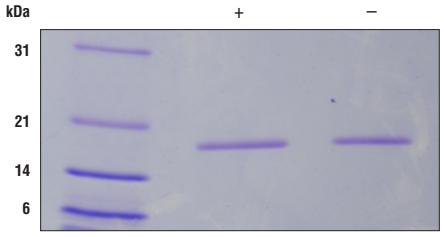
Molecular Weight: 18 kDa

Endotoxin: Endotoxin levels are ≤ 1 EU / 1 µg hIL-1α.

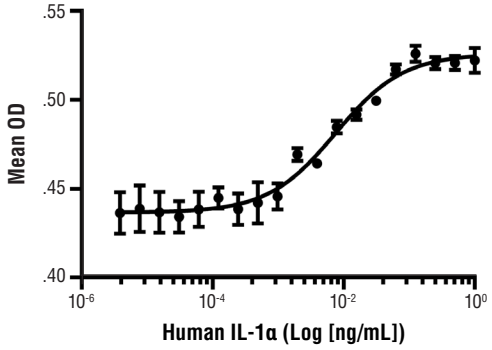
Purity: ≥ 95% purity was determined by SDS-PAGE.

Source/Purification: Recombinant human IL-1α was expressed in *E. coli* and is supplied in a lyophilized form.

Bioactivity: The bioactivity of recombinant hIL-1α was determined in a D10S cell proliferation assay. The ED_{50} of each lot is ≤ 50 pg/ml.



The purity of Human IL-1α Recombinant Protein was determined by SDS-PAGE of 1 µg reduced (+) and non-reduced (-) recombinant hIL-1α and staining with Coomassie Blue.



Serial dilutions of Human IL-1α Recombinant Protein were added to D10S cells. Cell proliferation was measured and the linear portion of the curve was used to calculate the ED_{50}.

Storage: Human IL-1α Recombinant Protein is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/ml which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long-term storage.

Background References:

(1) Garlanda, C. et al. (2013) *Immunity* 39, 1003-18.

(2) Palomo, J. et al. (2015) *Cytokine* 76, 25-37.

(3) Bertheloot, D. and Latz, E. (2017) *Cell Mol Immunol* 14, 43-64.

(4) Di Paolo, N.C. and Shayakhmetov, D.M. (2016) *Nat Immunol* 17, 906-13.

(5) Lamacchia, C. et al. (2013) *Cytokine* 63, 135-44.

(6) Rider, P. et al. (2013) *Semin Immunol* 25, 430-8.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **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 **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.