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## Human Interleukin-1α (hIL-1α)

**For Research Use Only. Not for Use in Diagnostic Procedures.**

MW (kDa):	UniProt ID:	Entrez-Gene Id:
18	#P01583	3552

### Background

IL-1α is a pro-inflammatory cytokine produced by activated monocytes, lymphocytes, and epithelial cells (1). IL-1α is synthesized as an active precursor protein that appears to be cleaved by cytosolic proteases into its mature form (1,2). Often, precursor and mature forms of IL-1α are primarily retained intracellularly rather than constitutively secreted. (1,2). Signaling by IL-1α involves IL-1α binding to an IL-1 accessory protein (IL-1-AcP) and then the complex binds to IL-1RI (1,2). Signaling occurs through activation of MAP kinase and NF-κB pathways (1,2). IL-1α also binds to an IL-RII that lacks an intracellular signaling domain and thereby serves as a high affinity decoy receptor. IL-1α activity is inhibited through IL-1R antagonist (IL-1Ra) that binds IL-1R1 but does not signal. IL-1α has been shown to be a key mediator of virus-induced inflammatory responses in mice (3).

### Endotoxin

Less than 0.01 ng endotoxin/1 μg hIL-1α.

### Purity

>98% as determined by SDS-PAGE of 6 μg reduced (+) and non-reduced (-) recombinant hIL-1α. All lots are greater than 98% pure.

### Source / Purification

Recombinant human IL-1α (hIL-1α) Ser113-Ala271 (Accession #NP\_000566) was produced in *E. coli* at Cell Signaling Technology.

### Bioactivity

The bioactivity of recombinant hIL-1α was determined by its ability to induce IL-8 production by primary human fibroblasts. The ED<sub>50</sub> of each lot is between 5-15 pg/ml.

### Background References

1. Dinarello, C.A. (1996) *Blood* 87, 2095-147.
2. Allan, S.M. et al. (2005) *Nat Rev Immunol* 5, 629-40.
3. Di Paolo, N.C. et al. (2009) *Immunity* 31, 110-21.

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