

Animal-Free IL-1 alpha Protein, Human (His)

Cat. No.:	HY-P700095AF
Synonyms:	Hematopoietin-1; Lymphocyte-Activating Factor (LAF); Endogenous Pyrogen (EP); IL1A; IL1F1
Species:	Human
Source:	E. coli
Accession:	P01583 (S113-A271)
Gene ID:	3552
Molecular Weight:	Approximately 18.99 kDa

PROPERTIES

AA Sequence	<pre> MSAPFSFLSN VKYNFMRIIK YEFILNDALN QSIIRANDQY LTAALHNL D EAVKFDMGAY KSSKDDAKIT VILRISK TQL YVTAQDE DQP VLLKEMPEIP KTITGSETNL LFFWETHG TK NYFTSVAHPN LFIATKQDYW VCLAGGPPSI TDFQILE NQA </pre>
Biological Activity	Measure by its ability to induce D10.G4.1 cells proliferation. The ED ₅₀ for this effect is <10 pg/mL. The specific activity of recombinant human IL-1 alpha is approximately >1 x10 ⁸ IU/ mg
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 8.0.
Endotoxin Level	<0.1 EU per 1 µg of the protein by the LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Interleukin-1 alpha (IL-1 alpha), a cytokine consistently found intracellularly in nearly all quiescent non-hematopoietic cells, plays a pivotal role in inflammation and serves as a crucial link between the innate and adaptive immune systems. Upon binding to its receptor IL1R1, in conjunction with its accessory protein IL1RAP, IL-1 alpha forms the high-affinity interleukin-1 receptor complex. This complex initiates signaling cascades involving the recruitment of adapter molecules such as MYD88, IRAK1, or IRAK4, subsequently leading to the activation of NF-kappa-B and the three MAPK pathways—p38, p42/p44, and JNK pathways. Intracellularly, IL-1 alpha acts as an alarmin, and its release into the extracellular space upon cell death,
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following cell membrane disruption, induces inflammation and signals the host response to injury or damage. Beyond its role as a danger signal released during cell necrosis, IL-1 alpha also directly senses DNA damage, serving as a signal for genotoxic stress without compromising cell integrity. Moreover, IL-1 alpha's interactions with proteins such as TMED10, IL1R1, and S100A13 contribute to its regulatory mechanisms, mediating translocation, secretion, and export processes.

Caution: Product has not been fully validated for medical applications. For research use only.

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