

Animal-Free IL-6 Protein, Human (His)

Cat. No.:	HY-P7044AF
Synonyms:	Interleukin-6; IL-6; B-Cell Stimulatory Factor 2; BSF-2; CTL Differentiation Factor; CDF; Hybridoma Growth Factor; Interferon Beta-2; IFN-Beta-2; IL6; IFNB2
Species:	Human
Source:	E. coli
Accession:	P05231 (P29-M212)
Gene ID:	3569
Molecular Weight:	Approximately 21.8 kDa

PROPERTIES

AA Sequence	<p>M V P P G E D S K D V A A P H R Q P L T S S E R I D K Q I R Y I L D G I S A L R</p> <p>K E T C N K S N M C E S S K E A L A E N N L N L P K M A E K D G C F Q S G F N E</p> <p>E T C L V K I I T G L L E F E V Y L E Y L Q N R F E S S E E Q A R A V Q M S T K</p> <p>V L I Q F L Q K K A K N L D A I T T P D P T T N A S L L T K L Q A Q N Q W L Q D</p> <p>M T T H L I L R S F K E F L Q S S L R A L R Q M</p>
Biological Activity	<p>1. Measure by its ability to induce proliferation in TF-1 cells. The ED₅₀ for this effect is <0.5 ng/mL. The specific activity of recombinant human IL-6 is approximately >5 x 10⁸ IU/mg.</p> <p>2. Measure by its ability to induce proliferation in MCF-7 cells. The ED₅₀ for this effect is <4.4 ng/mL.</p>
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	<p>GMP IL-6 Protein, a versatile cytokine, performs various biological functions in immunity, tissue regeneration, and metabolism. Upon binding to IL6R, the resulting complex associates with the signaling subunit IL6ST/gp130, triggering the intracellular IL6-signaling pathway. Its interaction with membrane-bound IL6R and IL6ST stimulates 'classic signaling,' while the binding of IL6 and soluble IL6R to IL6ST induces 'trans-signaling.' Moreover, 'cluster signaling' occurs when membrane-</p>
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bound IL6:IL6R complexes on transmitter cells activate IL6ST receptors on neighboring receiver cells. IL-6 serves as a potent inducer of the acute phase response, rapidly mobilizing host defenses during infection and tissue injury, although excessive IL6 synthesis is implicated in disease pathology. In the innate immune response, IL-6 is synthesized by myeloid cells, such as macrophages and dendritic cells, upon recognizing pathogens through toll-like receptors at the infection or tissue injury site. In the adaptive immune response, IL-6 is essential for B-cell differentiation into immunoglobulin-secreting cells and plays a major role in the differentiation of CD4(+) T cell subsets. It is a crucial factor in the development of T follicular helper (Tfh) cells necessary for germinal-center formation and is required to drive naive CD4(+) T cells to the Th17 lineage. Additionally, IL-6 is essential for the proliferation of myeloma cells and the survival of plasmablast cells.

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

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