

# Recombinant Human Interleukin-6

**Catalogue number:** CYT-26780

**Size:** 20 µg

## Scientific Background

**Gene:** *IL6*
**Synonyms:** CTL differentiation factor, B-cell stimulatory factor 2, Hybridoma growth factor, Interferon beta-2

Interleukin 6 (IL-6) is a pleiotropic  $\alpha$ -helical cytokine that plays important roles in acute phase reactions, inflammation, hematopoiesis, bone metabolism, and cancer progression. IL-6 activity is essential for the transition from acute inflammation to either acquired immunity or chronic inflammatory disease. It is secreted by multiple cell types as a 22 kDa-28 kDa phosphorylated and variably glycosylated molecule. Mature human IL6 is 183 amino acids (aa) in length and shares 41% aa sequence identity with mouse and rat IL-6. Alternate splicing generates several isoforms with internal deletions, some of which exhibit antagonistic properties. Human IL6 is equally active on mouse and rat cells. IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL6 R) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R, triggering IL-6 R association with gp130 and gp130 dimerization. Soluble forms of IL-6 R are generated by both alternate splicing and proteolytic cleavage. In a mechanism known as trans-signaling, complexes of soluble IL-6 and IL-6 R elicit responses from gp130-expressing cells that lack cell surface IL-6 R. Trans-signaling enables a wider range of cell types to respond to IL-6, as the expression of gp130 is ubiquitous, while that of IL-6 R is predominantly restricted to hepatocytes, leukocytes, and lymphocytes. Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R but not from other cytokines that utilize gp130 as a co-receptor.

## Sequence

```
MAPVPPGEDSKDVAAPHRQPLTSSERIDKQIRYILDGISALRKETCNKSNMCESSKEALAEENLNLPKMAEKDGCFFQSGFNEE
TCLVKIITGLLEFVYLEYLQNRFESEEQARAVQMSTKVLIQFLQKKAKNLDAITTPDPTTNASLLTKLQAQNQLQDMTH
LILRSFKEFLQSSLRALRQM
```

## Product Specifications

<b>Expressed in</b>	E.coli
<b>Purity</b>	> 98% by SDS-PAGE & silver stain
<b>Endotoxin level</b>	< 0.1ng per µg (IEU/µg) of rh IL-6
<b>Buffer</b>	PBS
<b>Stabilizer</b>	None
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	186
<b>MW:</b>	21.1 kDa
<b>Result by N-terminal sequencing</b>	MAPVPPGE

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**Database References Antigen**

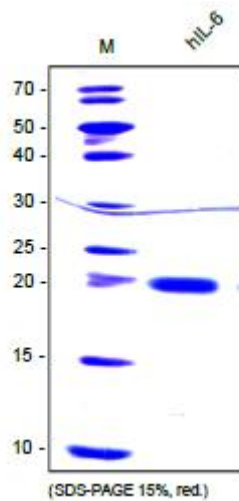
Protein RefSeq: NP\_000591  
 Uniprot ID: P05321  
 mRNA RefSeq: NM\_000600

**Stability:** The lyophilized IL-6 though stable at room temperature, is best stored desiccated below 0°C. Reconstituted IL-6 should be stored in working aliquots at -20°C.

**Reconstitution:** The lyophilized IL-6 should be reconstituted in water to a concentration not less than 100µg/ml. This solution can be diluted into other buffered solutions or stored at -20°C for future use.

**AVOID REPEATED FREEZE AND THAW CYCLES!**

**Handling/Applications**



**Figure 1.** SDS-PAGE analysis of recombinant human IL-6. Sample was loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Coomassie blue.