Recombinant Human Interleukin-6

20140306BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**200-030-DC**
Size:	50 µg
Lot. No.:	According to product label
Country of origin:	Germany

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 α-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 gp130expressing 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.

References

1. Muti ur Rehman Khan *et al*, (2014) BioMed Research Int
2. Van Snick, J. (1990) Annu. Rev. Immunol. 8:253.
3. Hodge, D.R. et al. (2005) Eur. J. Cancer 41:2502.
4. Jones, S.A. (2005) J. Immunol. 175:3468.
5. RoseJohn, S. et al. (2006) J. Leukoc. Biol. 80:227.
6. Hirano, T. et al. (1986) Nature 324:73.
7. Alberti, L. et al. (2005) Cancer Res. 65:2.
8. Kestler, D.P. et al. (1995) Blood 86:4559.
9. Kestler, D.P. et al. (1999) Am. J. Hematol. 61:169.
10. Bihl, M.P. et al. (2002) Am. J. Respir. Cell Mol. Biol. 27:48.
11. Murakami, M. et al. (1993) Science 260:1808.

Sequence

MVPPGEDSKDVAAPHRQPLTSSERIDKQIRYILDGISALRKETCNK
SNMCESSKEALAENNLNLPKMAEKDGCFQSGFNEETCLVKIITGLL
EFEVYLEYLQNRFESSEEQARAVQMSTKVLIQFLQKKAKNLDAITT
PDPTTNASLLTKLQAQNQWLQDMTTHLILRSFKEFLQSSLRALRQM

Database References

Protein RefSeq:	NP_000591
Uniprot ID:	P05321
mRNA RefSeq:	NM_000600

Product Specifications

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

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 100 µg/ml. This solution can be diluted into other buffered solutions or stored at -20 °C for future use.

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The ED_{50} as determined by the dose-dependent stimulation of murine hybridoma B9 cells is in the range of 2-10 pg/ml.

ReliaTech GmbH
Phone: +49 (0)5331 8586 987 • Fax: +49 (0)5331 8586 989 • E-mail: info@reliatech.de • web: www.reliatech.de
Location: Lindener Str. 15, 38300 Wolfenbüttel, Germany

Recombinant Human Interleukin-6

20140306BB

Handling/Applications

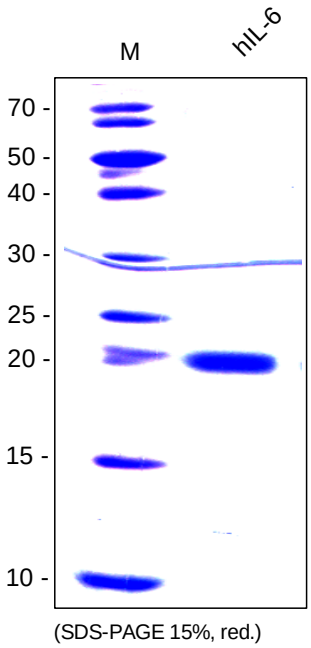

Figure 1. SDS-PAGE analysis of recombinant human IL-6. Sample was loaded in 15% SDS-polyacrylamide gel under reducing conditions and stained with Coomassie blue.

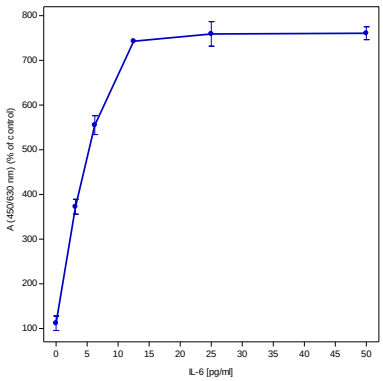

Figure 2. Proliferation assay with the mouse hybridoma cell line B9. The cells were stimulated with increasing amounts of recombinant human IL-6.

ReliaTech GmbH
Phone: +49 (0)5331 8586 987 • Fax: +49 (0)5331 8586 989 • E-mail: info@reliatech.de • web: www.reliatech.de
Location: Lindener Str. 15, 38300 Wolfenbüttel, Germany