

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-6 in direct ELISAs. Does not cross-react with recombinant IL-6 from mouse, rat, or pig.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 1936R
<b>Purification</b>	Protein A or G purified from cell culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human IL-6 Val30-Met212 Accession # P05231
<b>Conjugate</b>	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Intracellular Staining by Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	Human peripheral blood mononuclear cells (PBMCs) treated LPS were fixed with Flow Cytometry Fixation Buffer (Catalog # FC004) and permeabilized with Flow Cytometry Permeabilization/Wash Buffer I (Catalog # FC005)

## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

## BACKGROUND

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 22-28 kDa phosphorylated and variably glycosylated molecule (1-4). Mature human IL-6 is 183 amino acids (aa) in length and shares 41% aa sequence identity with mouse and rat IL-6 (5). Alternate splicing generates several isoforms with internal deletions, some of which exhibit antagonistic properties (6-9). Human IL-6 is equally active on mouse and rat cells (10). IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL-6 R) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R, triggering IL-6 R association with gp130 and gp130 dimerization (11). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (12). Soluble forms of IL-6 R are generated by both alternate splicing and proteolytic cleavage (3). 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 (3). 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 (3). Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R but not from other cytokines that utilize gp130 as a coreceptor (4, 13).

## References:

1. Van Snick, J. (1990) *Annu. Rev. Immunol.* **8**:253.
2. Hodge, D.R. *et al.* (2005) *Eur. J. Cancer* **41**:2502.
3. Jones, S.A. (2005) *J. Immunol.* **175**:3468.
4. Rose-John, S. *et al.* (2006) *J. Leukoc. Biol.* **80**:227.
5. Hirano, T. *et al.* (1986) *Nature* **324**:73.
6. Alberti, L. *et al.* (2005) *Cancer Res.* **65**:2.
7. Kestler, D.P. *et al.* (1995) *Blood* **86**:4559.
8. Kestler, D.P. *et al.* (1999) *Am. J. Hematol.* **61**:169.
9. Bihl, M.P. *et al.* (2002) *Am. J. Respir. Cell Mol. Biol.* **27**:48.
10. Chiu, C.P. *et al.* (1988) *Proc. Natl. Acad. Sci. USA* **85**:7099.
11. Murakami, M. *et al.* (1993) *Science* **260**:1808.
12. Muller-Newen, G. (2003) *Sci. STKE* **2003**:PE40.
13. Mitsuyama, K. *et al.* (2006) *Clin. Exp. Immunol.* **143**:125.

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