

#### DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat and mouse IL-6 in direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant cotton rat IL-6 is observed, and less than 1% cross-reactivity with recombinant human IL-6 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant rat IL-6 Phe25-Thr211 Accession # P20607
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

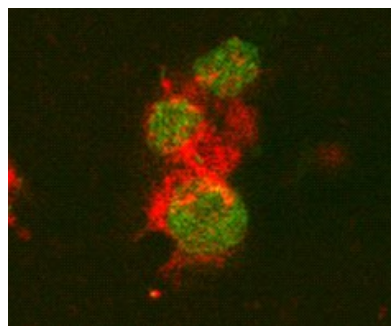
#### APPLICATIONS

**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>Western Blot</b>	0.1 µg/mL	Recombinant Rat IL-6 (Catalog # 506-RL)
<b>Immunocytochemistry</b>	5-15 µg/mL	See Below
<b>Neutralization</b>	Measured by its ability to neutralize IL-6-induced proliferation in the T1165.85.2.1 mouse plasmacytoma cell line. Nordan, R.P. and M. Potter (1986) <i>Science</i> <b>233</b> :566. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.1-0.5 µg/mL in the presence of 0.6 ng/mL Recombinant Rat IL-6.	

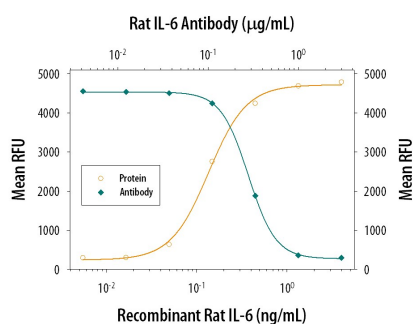
#### DATA

##### Immunocytochemistry



**IL-6 in Mouse T Cells.** IL-6 was detected in immersion fixed activated mouse T Cells using 15 µg/mL Rat IL-6 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF506) for 3 hours at room temperature. Cells were stained (red) and counterstained (green). View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

##### Neutralization



**Cell Proliferation Induced by IL-6 and Neutralization by Rat IL-6 Antibody.** Recombinant Rat IL-6 (Catalog # 506-RL) stimulates proliferation in the T1165.85.2.1 mouse plasmacytoma cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat IL-6 (0.6 ng/mL) is neutralized (green line) by increasing concentrations of Rat IL-6 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF506). The ND<sub>50</sub> is typically 0.1-0.5 µg/mL.

#### PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

#### BACKGROUND

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 central to 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 rat IL-6 is 187 amino acids (aa) in length and shares 41% and 85% aa sequence identity with human and mouse IL-6, respectively (5). 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 (6). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (7). 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, 8).

#### References:

1. Van Snick, J. (1990) *Annu. Rev. Immunol.* **8**:253.
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3. Jones, S.A. (2005) *J. Immunol.* **175**:3468.
4. Rose-John, S. *et al.* (2006) *J. Leukoc. Biol.* **80**:227.
5. Northemann, W. *et al.* (1989) *J. Biol. Chem.* **264**:16072.
6. Murakami, M. *et al.* (1993) *Science* **260**:1808.
7. Muller-Newen, G. (2003) *Sci. STKE* **2003**:PE40.
8. Mitsuyama, K. *et al.* (2006) *Clin. Exp. Immunol.* **143**:125.