

#### DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat IL-6 in direct ELISAs.
<b>Source</b>	Recombinant Monoclonal Mouse IgG <sub>2B</sub> Clone # 53325R
<b>Purification</b>	Protein A or G purified from cell culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant rat IL-6 Phe25-Thr211 Accession # P20607
<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 either lyophilized or 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.

<b>Rat IL-6 Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 µg/mL	Rat IL-6 Antibody (Catalog # <a href="#">MAB506R</a> )
<b>ELISA Detection</b>	0.1-0.4 µg/mL	Rat IL-6 Biotinylated Antibody (Catalog # <a href="#">BAF506</a> )
<b>Standard</b>		Recombinant Rat IL-6 (Catalog # <a href="#">506-RL</a> )

#### PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 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, phosphorylated and variably glycosylated cytokine that plays important roles in the acute phase reaction, inflammation, hematopoiesis, bone metabolism, and cancer progression. Mature rat IL-6 is 187 amino acids (aa) in length that is typically expressed as a 22-28 kDA molecular weight protein. Rat IL-6 shares 39% and 85% aa sequence identity with human and mouse IL-6, respectively. Alternative splicing generates several isoforms with internal deletions, some of which exhibit antagonistic properties. IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL-6 R alpha) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R alpha, triggering IL-6 R alpha association with gp130 and gp130 dimerization. gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM. Soluble forms of IL-6 R alpha are generated by both alternative splicing and proteolytic cleavage. In a mechanism known as trans-signaling, complexes of soluble IL-6 and IL-6 R alpha elicit responses from gp130-expressing cells that lack cell surface IL-6 R alpha. 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 alpha is predominantly restricted to hepatocytes, monocytes, and resting lymphocytes. Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R alpha but not from other cytokines that use gp130 as a co-receptor. IL-6, along with TNF-alpha and IL-1, function to drive the acute inflammatory response and the transition from acute inflammation to either acquired immunity or chronic inflammatory disease. When dysregulated, it contributes to chronic inflammation in obesity, insulin resistance, inflammatory bowel disease, arthritis, sepsis, and atherosclerosis. IL-6 can also function as an anti-inflammatory molecule, as in skeletal muscle where it is secreted in response to exercise. In addition, it enhances hematopoietic stem cell proliferation and the differentiation of Th17 cells, memory B cells, and plasma cells.