Mouse IL-6 Rα Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1830

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse IL-6 Rα in ELISAs and Western blots. In sandwich ELISAs, less than 0.3% cross-reactivity with recombinant mouse (rm) IL-6, recombinant human IL-6 R and rmgp130 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse IL-6 Rα Leu20-Glu357 Accession # P22272
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

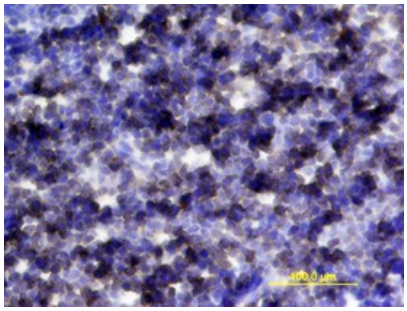
APPLICATIONS

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
Western Blot	0.1 µg/mL	Recombinant Mouse IL-6 Rα (Catalog # 1830-SR)
Flow Cytometry	2.5 µg/10^6 cells	Mouse $CD3^+$ splenocytes
Immunohistochemistry	5-15 µg/mL	See Below
Mouse IL-6 Rα Sandwich Immunoassay		**Reagent**
ELISA Capture	0.2-0.8 µg/mL	Mouse IL-6 Rα Antibody (Catalog # AF1830)
ELISA Detection	0.1-0.4 µg/mL	Mouse IL-6 Rα Biotinylated Antibody (Catalog # BAF1830)
Standard		Recombinant Mouse IL-6 Rα (Catalog # 1830-SR)
Neutralization	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) Science **233**:566. The Neutralization Dose (ND_{50}) is typically 0.2-1 µg/mL in the presence of 0.25 ng/mL Recombinant Mouse IL-6.	

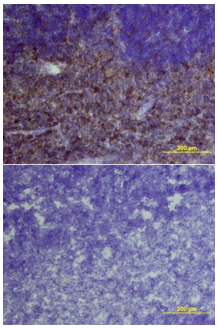
DATA

Immunohistochemistry



IL-6 Rα in Mouse Thymus. IL-6 Rα was detected in perfusion fixed frozen sections of mouse thymus using Mouse IL-6 Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1830) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Frozen Tissue Sections.

Immunohistochemistry



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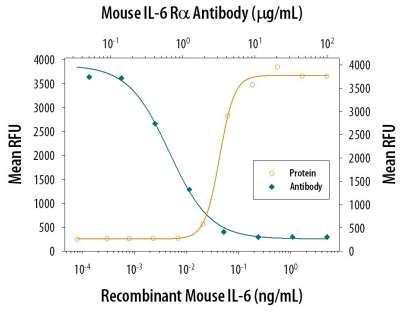
Neutralization



Cell Proliferation Induced by IL-6 and Neutralization by Mouse IL-6 Rα Antibody. Recombinant Mouse IL-6 (Catalog # 406-ML) stimulates proliferation in the T1165.85.2.1 mouse plasmacytoma cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Mouse IL-6 (0.25 ng/mL) is neutralized (green line) by increasing concentrations of Mouse IL-6 Rα Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1830). The ND_{50} is typically 0.2-1 µg/mL.

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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

Interleukin 6 (IL-6) is a multifunctional cytokine that exerts its activities by binding to a high-affinity receptor complex consisting of two membrane glycoproteins: an 80 kDa ligand binding subunit (IL-6 Rα/CD126) and a 130 kDa nonligand-binding signal-transducing subunit (gp130/CD130) (1-4). The mouse IL-6 Rα cDNA encodes a precursor type I transmembrane protein of 460 amino acids (aa) that contains a 19 aa signal sequence, a 345 aa extracellular ligand binding domain, a 21 aa transmembrane region, and a 75 aa cytoplasmic segment (2). The extracellular segment contains an Ig-like and a fibronectin-type III domain, plus a membrane proximal WSXWS motif. In their extracellular regions, mouse IL-6 Rα shares 89%, 51% and 50% aa identity with rat, human and porcine IL-6 Rα, respectively. Unlike gp130 that is expressed ubiquitously, the cellular distribution of IL-6 Rα is predominantly limited to hepatocytes and leukocyte subpopulations such as monocytes, neutrophils, T and B cells. Soluble IL-6 Rα has been found in various body fluids (5). Two soluble receptor isoforms that arise either from proteolytic cleavage of the membrane-bound IL-6 Rα, or by alternative mRNA splicing (reported only in human) have been described (6, 7). Soluble IL-6 Rα binds IL-6 with an affinity similar to that of the membrane-bound IL-6 Rα. More importantly, the soluble IL-6 Rα/IL-6 complex is capable of interacting with the membrane-bound gp130 to activate cells that lack an integral membrane IL-6 Rα. It has been documented that elevated soluble IL-6 R is associated with numerous diseases including arthritic lesions, multiple myeloma and Crohn's disease (6, 7).

References:

1. Yamasaki, K. *et al.* (1988) Science **241**:825.
2. Sugita, T. *et al.* (1990) J. Exp. Med. **171**:2001.
3. Hibi, M. *et al.* (1990) Cell **63**:1149.
4. Saito, M. *et al.* (1992) J. Immunol. **148**:4066.
5. Novick, D. *et al.* (1989) J. Exp. Med. **170**:1409.
6. Jones, S.A. *et al.* (2001) FASEB J. **15**:43.
7. Jones, S.A. and S. Rose-John (2002) Biochim. Biophys. Acta **1592**:251.