Recombinant Mouse IL-6/IL-6 Rα Complex

Catalog Number: 9038-SR/CF

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived

Mouse IL-6 Rα (Leu20-Glu357) Accession # P22272	GGGSGGGSGGGS	Mouse IL-6 (Phe25-Thr211) Accession # P08505

N-terminus C-terminus

N-terminal Sequence Analysis	Leu20 (major), Leu28 (minor)
Predicted Molecular Mass	60 kDa

SPECIFICATIONS

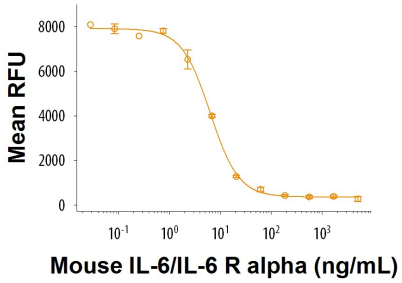
SDS-PAGE	70-87 kDa, reducing conditions
Activity	Measured by its ability to inhibit M1 mouse myeloid leukemia cell proliferation. The ED_{50} for this effect is typically 2-12 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in 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, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



Recombinant Mouse IL-6/ IL-6 R alpha complex (Catalog # 9038-SR/CF) inhibits M1 mouse myeloid leukemia cell proliferation. The ED_{50} for this effect is typically 2-12 ng/mL.

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BACKGROUND

Interleukin-6 (IL-6) is a pleiotropic, α-helical, 22 - 28 kDa phosphorylated and variably glycosylated cytokine that plays important roles in the acute phase reaction, inflammation, hematopoiesis, bone metabolism, and cancer progression. IL-6, along with TNF-α and IL-1, drives the acute inflammatory response and the transition from acute inflammation to either acquired immunity or chronic inflammatory disease (1-5). When dysregulated, it contributes to chronic inflammation in obesity, insulin resistance, inflammatory bowel disease, arthritis, sepsis, and atherosclerosis (1-3). IL-6 can also function as an anti-inflammatory molecule, as in skeletal muscle where it is secreted in response to exercise (2). In addition, it enhances hematopoietic stem cell proliferation and the differentiation of Th17 cells, memory B cells, and plasma cells (1, 6). 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 Rα, triggering IL-6 Rα association with gp130 and gp130 dimerization (7). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (8). Soluble forms of IL-6 Rα are generated by both alternative splicing and proteolytic cleavage (3). In a mechanism known as trans-signaling, complexes of soluble IL-6 and IL-6 Rα elicit responses from gp130-expressing cells that lack cell surface IL-6 Rα (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 Rα is predominantly restricted to hepatocytes, monocytes, and resting lymphocytes (2, 3). Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 Rα but not from other cytokines that use gp130 as a co-receptor (3, 9). Mature mouse IL-6 shares 39% and 85% amino acid (aa) sequence identity with human and rat IL-6, respectively (10-12). Within the extracellular domain, mouse IL-6 Rα shares 51% and 89% aa sequence identity with human and rat IL-6 Rα, respectively (13).

References:

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