Recombinant Mouse IL-6

Catalog Number: 406-ML/CF

DESCRIPTION

Source	*E. coli*-derived Phe25-Thr211, with an N-terminal Met Accession # P08505
N-terminal Sequence Analysis	Phe25
Predicted Molecular Mass	21.8 kDa

SPECIFICATIONS

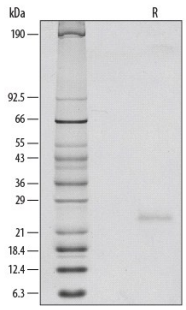
Activity	Measured in a cell proliferation assay using T1165.85.2.1 mouse plasmacytoma cells. Nordan, R.P. *et al.* (1987) J. Immunol. **139**:813. The ED_{50} for this effect is typically 0.02-0.06 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in Sodium Acetate and EDTA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Do not freeze.** ● 6 months from date of receipt, 2 to 8 °C as supplied.

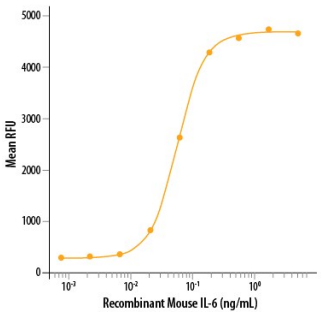
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse IL-6 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 24 kDa.

Bioactivity



Recombinant Mouse IL-6 (Catalog # 406-ML/CF) stimulates cell proliferation of the T1165.85.2.1 mouse plasmacytoma cell line. The ED_{50} for this effect is typically 0.02-0.06 ng/mL.

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bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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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 (1 - 5). Mature mouse IL-6 is 187 amino acids (aa) in length and shares 39% and 85% aa sequence identity with human and rat IL-6, respectively (6 - 8). 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 (9). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (10). Soluble forms of IL-6 Rα are generated by both alternative splicing and proteolytic cleavage (5). 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 (5). 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, 5). 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 (5, 11). 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, 2, 5). 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, 12).

References:

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North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
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