

DESCRIPTION

Source *E. coli*-derived human IL-6 protein
Pro29-Met212
Accession # P05231.1

N-terminal Sequence Analysis Pro29

Predicted Molecular Mass 20.9 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 ED₅₀ for this effect is 0.2-0.8 ng/mL.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100-200 µg/mL in sterile PBS.

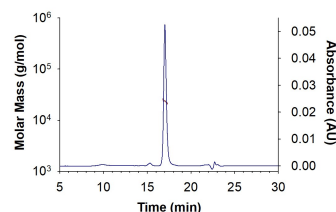
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

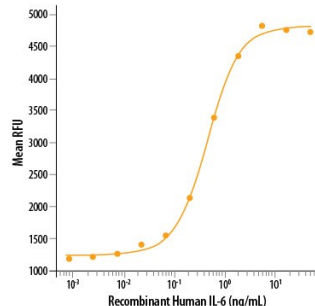
SEC-MALS



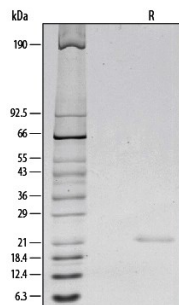
Recombinant Human IL-6 Protein SEC-MALS.

Recombinant Human IL-6 (Catalog # 206-IL/CF) has a molecular weight (MW) of 23.1 kDa as analyzed by SEC-MALS, suggesting that this protein is a monomer.

Bioactivity



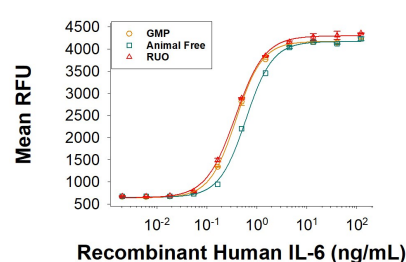
SDS-PAGE



Recombinant Human IL-6 Protein SDS-PAGE

1 µg/lane of Recombinant Human IL-6 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 21 kDa.

Bioactivity



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 human IL-6 is 183 amino acids (aa) in length and shares 39% aa sequence identity with mouse and rat IL-6 (6). Alternative splicing generates several isoforms with internal deletions, some of which exhibit antagonistic properties (7-10). IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL-6 R α) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R α , triggering IL-6 R α association with gp130 and gp130 dimerization (11). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (12). Soluble forms of IL-6 R α 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 R α elicit responses from gp130-expressing cells that lack cell surface IL-6 R α (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 R α is predominantly restricted to hepatocytes, monocytes, and resting lymphocytes (2, 5). Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R α but not from other cytokines that use gp130 as a co-receptor (5, 13). 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, 14).

References:

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