

General Information

Synonyms	BSF2; BSF-2; CDF; CTL differentiation factor ; HSF; IFNB2; IFN-beta-2; IL6; IL-6
Accession #	P08505
Source	Human embryonic kidney cell, HEK293-derived mouse IL-6 protein
	Phe25-Thr211
Predicted Molecular weight	21.8 kDa

Components and Storage

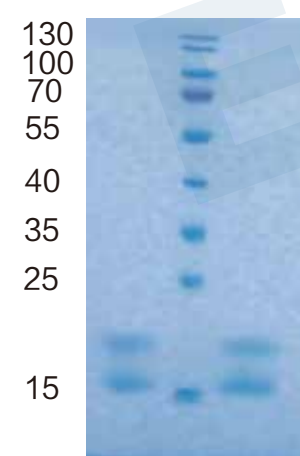
Formulation	Solution protein. Dissolved in sterile PBS buffer. This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
Storage and Stability	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.
Shipping	Shipping with dry ice.

Quality

Purity	> 95%, determined by SDS-PAGE.
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method.
Activity	Measured in a cell proliferation assay using T1165.85.2.1 mouse plasmacytoma cells. The EC50 for this effect is 0.01-0.05 ng/mL.

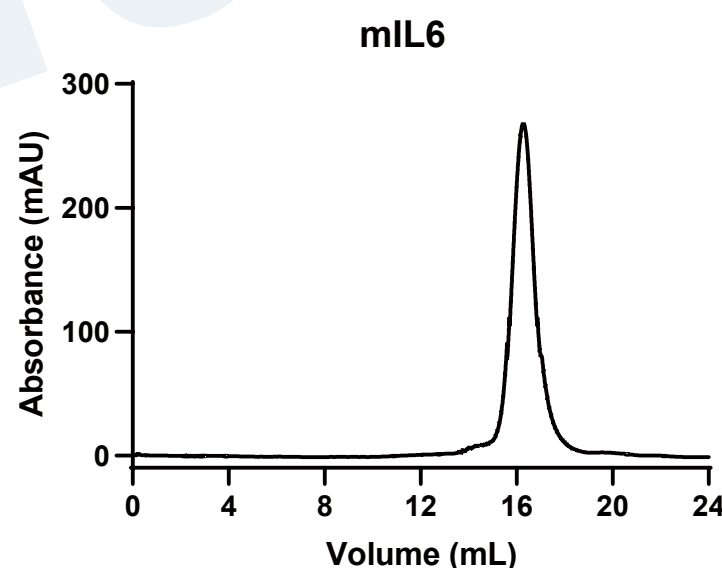
SDS-PAGE

kDa Lane 1 Lane 2



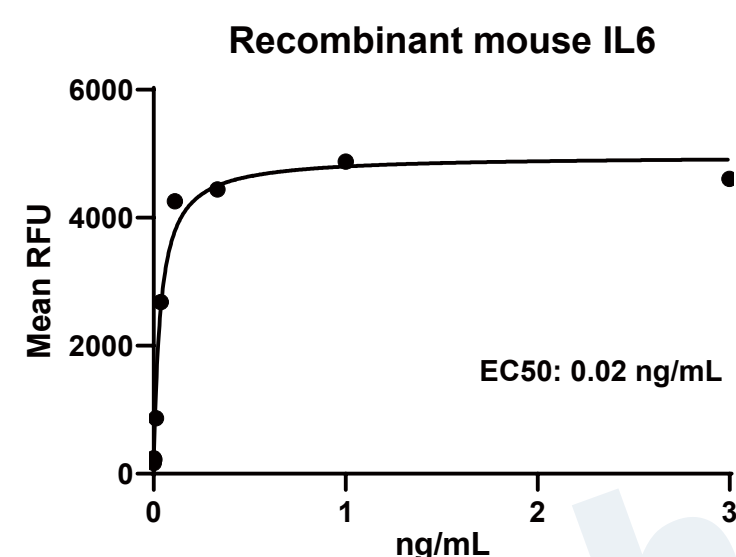
4 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Gel filtration



Size-exclusion chromatography of recombinant mouse IL6 protein (280 nm absorbance)

Bioactivity



Recombinant mouse IL6 (Catalog # MF-1006) stimulates cell proliferation of the T1165.85.2.1 mouse plasmacytoma cells

Background

Interleukin-6 (IL-6) 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 R alpha, triggering IL-6 R alpha association with gp130 and gp130 dimerization (9). Soluble forms of IL-6 R alpha 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 alpha elicit responses from gp130-expressing cells that lack cell surface IL-6 R alpha (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 alpha is predominantly restricted to hepatocytes, monocytes, and resting lymphocytes (2, 5). IL-6, along with TNF-alpha 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, 10).

Reference

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