

Background

Interleukin 6 (IL-6) is a pleiotropic α -helical cytokine that plays important roles in acute phase reactions, inflammation, hematopoiesis, bone metabolism, and cancer progression. IL-6 activity is central to the transition from acute inflammation to either acquired immunity or chronic inflammatory disease. It is secreted by multiple cell types as a 22 kDa - 28 kDa phosphorylated and variably glycosylated molecule (1 - 4). Mature equine IL-6 is 181 amino acids (aa) in length and shares 61%, 42%, and 43% aa sequence identity with human, mouse, and rat IL-6 (5). IL-6 induces signaling through a cell surface heterodimeric receptor complex composed of a ligand binding subunit (IL-6 R) and a signal transducing subunit (gp130). IL-6 binds to IL-6 R, triggering IL-6 R association with gp130 and gp130 dimerization (6). gp130 is also a component of the receptors for CLC, CNTF, CT-1, IL-11, IL-27, LIF, and OSM (7). Soluble forms of IL-6 R are generated by both alternate splicing and proteolytic cleavage (3). In a mechanism known as trans-signaling, complexes of soluble IL-6 and IL-6 R elicit responses from gp130-expressing cells that lack cell surface IL-6 R (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 R is predominantly restricted to hepatocytes, leukocytes, and lymphocytes (3). Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R but not from other cytokines that utilize gp130 as a coreceptor (4, 8).

References:

1. Van Snick, J. (1990) *Annu. Rev. Immunol.* **8**:253.
2. Hodge, D.R. *et al.* (2005) *Eur. J. Cancer* **41**:2502.
3. Jones, S.A. (2005) *J. Immunol.* **175**:3468.
4. Rose-John, S. *et al.* (2006) *J. Leukoc. Biol.* **80**:227.
5. Swiderski, S.E. *et al.* *Vet. Immunol. Immunopathol.* **77**:213.
6. Murakami, M. *et al.* (1993) *Science* **260**:1808.
7. Muller-Newen, G. (2003) *Sci. STKE* **2003**:PE40.
8. Mitsuyama, K. *et al.* (2006) *Clin. Exp. Immunol.* **143**:125.

Description

Source	<i>E. coli</i> -derived Phe26 - Met208, with an N-terminal Met Accession # Q95181.2
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	21 kDa

Specifications

Activity	Measured in a cell proliferation assay using T1165.85.2.1 mouse plasmacytoma cells. Nordan, R.P. <i>et al.</i> (1987) <i>J. Immunol.</i> 139 :813. The ED ₅₀ for this effect is typically 0.15 - 0.75 ng/mL.
Endotoxin Level	<1.0 EU per 1 μ g of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

Preparation and Storage

Reconstitution	Reconstitute at 10 μ g/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
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. <ul style="list-style-type: none"> ● 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.

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NOT FOR USE IN HUMANS.