**DESCRIPTION**

| Source                  | E. coli-derived mouse IL-6 protein  
Phe25-Thr211, with an N-terminal Met  
Accession # P08505 |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>N-terminal Sequence</td>
<td>Phe25</td>
</tr>
<tr>
<td>Predicted Molecular</td>
<td>21.8 kDa</td>
</tr>
<tr>
<td>Mass</td>
<td></td>
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</tbody>
</table>

**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<sub>50</sub> for this effect is 10.0-100 pg/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**

**Bioactivity**

Recombinant Mouse IL-6  
Protein Bioactivity Recombinant Mouse IL-6 (Catalog # 406-ML/CF) stimulates cell proliferation of the T1165.85.2.1 mouse plasmacytoma cell line. The ED<sub>50</sub> for this effect is 10.0-100 pg/mL.

**SDS-PAGE**

Recombinant Mouse IL-6  
Protein 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.
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: