# Recombinant Cynomolgus Monkey IL-6

Catalog Number: 10510-IL

## DESCRIPTION

| | |
|---|---|
| **Source** | Human embryonic kidney cell, HEK293-derived cynomolgus monkey IL-6 protein<br>Ala28-Met212<br>Accession # NP_001274245.1 |
| **N-terminal Sequence Analysis** | Ala28 |
| **Predicted Molecular Mass** | 21 kDa |

## SPECIFICATIONS

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|---|---|
| **SDS-PAGE** | 20-30 kDa, under reducing conditions |
| **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.<br>The $ED_{50}$ for this effect is 0.25-1.25 ng/mL. |
| **Endotoxin Level** | <0.10 EU per 1 µg of the protein by the LAL method. |
| **Purity** | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details. |

## PREPARATION AND STORAGE

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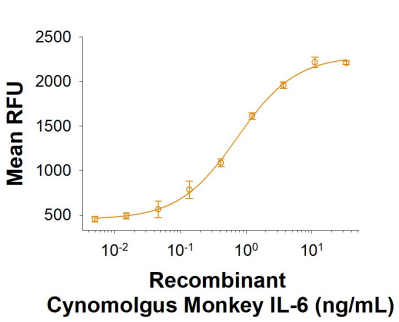
| **Reconstitution** | Reconstitute at 500 µg/mL in PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>• 12 months from date of receipt, -20 to -70 °C as supplied.<br>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>• 3 months, -20 to -70 °C under sterile conditions after reconstitution. |

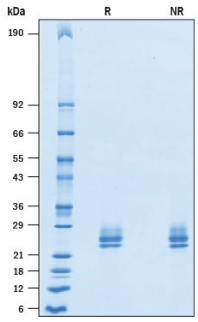
## DATA

**Bioactivity**




Recombinant Cynomolgus Monkey IL-6 (Catalog # 10510-IL) stimulates cell proliferation of the T1165.85.2.1 mouse plasmactoma cell line. The $ED_{50}$ for this effect is 0.25-1.25 ng/mL.

**SDS-PAGE**




2 µg/lane of Recombinant Cynomolgus Monkey IL-6 Protein (Catalog # 10510-IL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 20-30 kDa.



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## BACKGROUND

Interleukin-6 (IL-6) is a pleiotropic, variably glycosylated cytokine that plays important roles in the acute phase reaction, inflammation, hematopoiesis, bone metabolism, and cancer progression (1-5). Il-6 exhibits a classic four helix bundle protein structure with its alpha-helices found in an anti-parallel arrangement (6). Mature cynomolgus IL-6 shares 96% amino acid sequence identity with human IL-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 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 (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 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). Soluble splice forms of gp130 block trans-signaling from IL-6/IL-6 R alpha but not from other cytokines that use gp130 as a co-receptor (5, 13). 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, 14).

**References:**

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