

## Product Information

### Interleukin-6, rat recombinant, expressed in *E. coli*

Catalog Number **I0406**  
Storage Temperature  $-70\text{ }^{\circ}\text{C}$

Synonyms: IL-6; interferon- $\beta$ -2 (IFN- $\beta$ <sub>2</sub>), B cell stimulating factor (BSF-2), plasmacytoma growth factor (PCT-GF), monocyte derived human B cell growth factor, hepatocyte stimulating factor (HSF), Interleukin Hybridoma/Plasmacytoma-1 (IL-HP1)

#### Product Description

Interleukin-6 (IL-6) is a multifunctional protein discovered in the medium taken from RNA-stimulated fibroblastoid cells.<sup>1</sup> IL-6 was originally identified as a T cell-derived lymphokine that induces the final maturation step of B cells into antibody producing cells.<sup>2</sup>

IL-6, a pleiotrophic factor, acts on a variety of tissues.<sup>3,4</sup> IL-6 is expressed by a variety of normal and transformed cells including T cells, B cells, monocytes (macrophages), fibroblasts, hepatocytes, keratinocytes, astrocytes, vascular endothelial cells, and various tumor cells. The production of IL-6 is up regulated by numerous signals including mitogenic or antigenic stimulation, LPS, calcium ionophore, IL-1, IL-2, IFN, TNF, PDGF, and viruses. In monocytes, IL-4 and IL-13 inhibit the expression of IL-6.

Activities of IL-6 include: immunoglobulin secretion in B cells, production of various acute-phase proteins in liver cells, growth promotion of various B cells such as myeloma, plasmacytoma, and hybridoma cells, maturation of megakaryocytes, neuroneal differentiation, and osteoclast activation. IL-6 has been implicated in many diseases,<sup>5</sup> including Castleman's disease, multiple myeloma, rheumatoid arthritis, and postmenopausal osteoporosis.

Recombinant, rat Interleukin-6 is produced from a DNA sequence encoding the mature rat IL-6 protein.<sup>6</sup> The methionyl form of mature rat IL-6, a 188 amino acid protein, has a predicted molecular mass of ~22 kDa. Rat and mouse IL-6 share 93% amino acid sequence identity.

The product is supplied in a 0.2  $\mu\text{m}$  filtered solution of 50 mM sodium acetate, pH 4, with BSA as a carrier protein.

Bioactivity is measured in a cell proliferation assay using an IL-6-dependent mouse plasmacytoma cell line T1165.85.2.1.<sup>7</sup>

The ED<sub>50</sub> for this effect is typically 0.01–0.06 ng/ml.

The ED<sub>50</sub> is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: >97% (SDS-PAGE)

Endotoxin level: <0.01 EU/ $\mu\text{g}$  of cytokine  
[LAL (Limulus ameocyte lysate) method]

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

Store the product at  $-70\text{ }^{\circ}\text{C}$  up to 12 months from date of receipt. After opening, the product may be stored for 1 month at 2–8  $^{\circ}\text{C}$  under sterile conditions or 3 months at  $-20$  to  $-70\text{ }^{\circ}\text{C}$  under sterile conditions.

#### References

1. Billiau, D., Immunol. Today, **8**, 84 (1987).
2. Hirano, T. et al., Nature, **324**, 73 (1986).
3. Kishimoto, T., Blood, **74**, 1 (1989).
4. Kishimoto, T. et al., Science, **258**, 593 (1992).
5. Akira, S. et al., Adv. Immunol., **54**, 1 (1993).
6. Northemann, W. et al., J. Biol. Chem., **27**, 16072 (1989).
7. Nordan, R.P. et al., J. Immunol., **139**, 813 (1987).

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