

Recombinant Mouse IL-18

| | | |
|----------|----------|-------------|
| Code No. | Quantity | Form |
| B002-5 | 25 µg | Lyophilized |

BACKGROUND: Interleukin 18 (IL-18) is an 18-kDa cytokine which identified as a costimulatory factor for production of interferon- γ (IFN- γ) in response to toxic shock and shares functional similarities with IL-12. IL-18 is synthesized as a precursor 24-kDa molecule without a signal peptide and must be cleaved to produce an active molecule. IL-1 converting enzyme (ICE, Caspase-1) cleaves pro-IL-18 at aspartic acid in the P1 position, producing the mature, bioactive peptide that is readily released from the cells. It is reported that IL-18 is produced from Kupffer cells, activated macrophages, keratinocytes, intestinal epithelial cells, osteoblasts, adrenal cortex cells and murine diencephalon. IFN- γ is produced by activated T or NK cells and plays critical roles in the defense against microbial pathogens. IFN- γ activates macrophages and enhances NK activity and B cell maturation, proliferation and Ig secretion. IFN- γ also induces expression of MHC class I and II antigens and inhibits osteoclast activation. IL-18 acts on T helper type-1 (Th1) T cells and in combination with IL-12 strongly induces them to produce IFN- γ . Pleiotropic effects of IL-18 have also been reported, such as, enhancement production of IFN- γ and GM-CSF in peripheral blood mononuclear cells, production of Th1 cytokines, IL-2, GM-CSF and IFN- γ in T cells, enhancement of Fas ligand expression by Th1 cells.

DESCRIPTION: cDNA encoding the matured mouse IL-18 protein sequence (corresponding to 36-192 aa) was expressed in *E. coli*.

PURITY: Greater than 90% purity as confirmed on SDS-PAGE by Coomassie brilliant blue staining.

MOLECULAR WEIGHT: 18 kDa

ENDOTOXIN LEVEL:

Less than 0.1 ng/ μ g of recombinant mouse IL-18 protein, measured by the LAL assay.

FORMULATION: 25 μ g in PBS containing 0.1% BSA and 1% sucrose. Reconstitute in 250 μ L of ice-cold distilled water on ice.

INTENDED USE:

For Research Use Only. Not for use in diagnostic procedures.

STORAGE: This product is stable for 24 months from the date of manufacture when store at -20°C or below. After reconstitution, avoid repeated freezing and thawing. The IL-18 can be stored for 1 week at 4°C. For storage, prepare appropriate aliquots and freeze them at -80°C using low retention tube.

ACTIVITY: Induction of IFN- γ by Mouse IL-18 receptor transfected KG-1 cell [human myelomonocyte; ATCC CCL246] in response to the recombinant mouse IL-18 was measured using human IFN- γ ELISA.

Reference information

| IL-18 final conc. (ng/mL) | IFN- γ induction (IU/mL) |
|---------------------------|---------------------------------|
| 5 | 2863 |
| 10 | 7312 |

IFN- γ producing activity of the sample cells can be varied depends on cell conditions. Optimal concentration for each application should be determined by each laboratory.

REFERENCES:

- 1) Kuroda-Morimoto, M., *et al.*, *Int. Immunol.* **22**, 561-570 (2010)
- 2) Terada, M., *et al.*, *Proc. Natl. Acad. Sci. USA* **103**, 8816-8821 (2006)
- 3) Sasaki, Y., *et al.*, *J. Exp. Med.* **202**, 607-161 (2005)
- 4) Fukao, T., *et al.*, *J. Immunol.* **164**, 64-71 (2000)
- 5) Tao, D., *et al.*, *Cell Immunol.* **173**, 230-235 (1998)
- 6) Ushio, S., *et al.*, *J. Immunol.* **156**, 4274-4279 (1996)
- 7) Micallef, M., *et al.*, *Eur. J. Immunol.* **26**, 1647-1651 (1996)
- 8) Okamura, H., *et al.*, *Nature* **378**, 88-91 (1995)

This product or B004-5 is used in the reference number 1)-4).

The descriptions of the following protocols are examples. Each user should determine the appropriate condition.

IFN- γ PRODUCTION ASSAY:

- 1) Mouse IL-18 receptor transfected KG1 cells were cultured at 3×10^5 cells/mL for 24 hours at 37°C in 5% CO₂ incubator with RPMI 1640 without fetal calf serum.
- 2) After 24 hours of preculture, the cell concentration was adjusted to 1×10^6 cells/mL and incubated for 46-48 hours at 37°C in 5% CO₂ incubator with RPMI 1640 containing 10% fetal calf serum in the presence of IL-18.
- 3) The culture supernatant was recovered and the amount of IFN- γ were measured by Human IFN- γ ELISA Kit.

RELATED PRODUCTS:

Please visit our website at <https://ruo.mbl.co.jp/>.