

# Recombinant Mouse IL-18 (Without BSA)

Code No.	Quantity	Form
B004-2	200 µg	Lyophilized

**BACKGROUND:** Interleukin 18 (IL-18) is an 18-kDa cytokine which identified as a costimulatory factor for production of interferon- $\gamma$  (IFN- $\gamma$ ) 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- $\gamma$  is produced by activated T or NK cells and plays critical roles in the defense against microbial pathogens. IFN- $\gamma$  activates macrophages and enhances NK activity and B cell maturation, proliferation and Ig secretion. IFN- $\gamma$  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- $\gamma$ . Pleiotropic effects of IL-18 have also been reported, such as, enhancement production of IFN- $\gamma$  and GM-CSF in peripheral blood mononuclear cells, production of Th1 cytokines, IL-2, GM-CSF and IFN- $\gamma$  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/µg of recombinant mouse IL-18 protein, measured by the LAL assay.

**FORMULATION:** Lyophilized in PBS containing 1% sucrose. Reconstitute in 2 mL of ice-cold distilled water on ice.

## INTENDED USE:

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

**STORAGE:** Lyophilized Mouse IL-18 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- $\gamma$  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- $\gamma$  ELISA.

## Reference information

IL-18 final conc. (ng/mL)	IFN- $\gamma$ induction (IU/mL)
5	2863
10	7312

IFN- $\gamma$  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) Tao, D., *et al.*, *Cell Immunol.* **173**, 230-235 (1998)
- 2) Ushio, S., *et al.*, *J. Immunol.* **156**, 4274-4279 (1996)
- 3) Micaleff, M., *et al.*, *Eur. J. Immunol.* **26**, 1647-1651 (1996)
- 4) Okamura, H., *et al.*, *Nature* **378**, 88-91 (1995)

This product or B002-5 is used in the reference number 1)-4).

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

## IFN- $\gamma$ PRODUCTION ASSAY:

- 1) Mouse IL-18 receptor transfected KG-1 cells were cultured at  $3 \times 10^5$  cells/mL for 24 hours at 37°C in 5% CO<sub>2</sub> incubator with RPMI 1640 without fetal calf serum.
- 2) After 24 hours of preculture, the cell concentration was adjusted to  $1 \times 10^6$  cells/mL and incubated for 46-48 hours at 37°C in 5% CO<sub>2</sub> 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- $\gamma$  were measured by Human IFN- $\gamma$  ELISA Kit.

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