

Recombinant Human Interleukin 18 (without BSA)

Code No.	Quantity	Form
B003-2	200 µg x 1 vial	Solution in
		1% sucrose/PBS

BACKGROUND: Interleukin 18 (IL-18) is a 18 kDa novel 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, enhances NK activity and B cell maturation, proliferation and Ig secretion, induces MHC class I and II antigens, and inhibits osteoclast activation.

IL-18 acts on T helper 1-type T cells and in combination with IL-12 strongly induces them to produce IFN- γ . Pleiotropic effects of IL-18 has also been reported, such as, enhancement production of IFN- γ and GM-CSF in peripheral blood mononuclear cells, production of T helper type 1 cytokines, IL-2, GM-CSF and IFN- γ in T cells, enhancement of Fas ligand expression by T helper type 1 (Th1) cells.

DESCRIPTION : cDNA encoding the matured Human IL-18 protein sequence (corresponding to a.a. 37-193) was expressed in *E. coli*.

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

MOLECULAR WEIGHT: 18kDa

ENDOTOXIN LEVEL: Less than 0.1 ng per 1 µg of recombinant IL-18 protein, measured by LAL method.

SUPPLIED : 200 µg in 2 ml volume of PBS containing 1% sucrose.

STORAGE : This is stable for 24 months from the date of manufacture when stored at -80°C. Avoid repeated freeze/thaw cycles. For storage, prepare appropriate aliquots and freeze them at -80°C.

ACTIVITY : Induction of IFN- γ by KG-1 cell (Human myelomonocyte; ATCC CCL246) in response to the Human IL-18 was measured by Human IFN- γ ELISA.

The activity of lot 010 is as follow;

IL-18 conc. (ng/mL)	IFN- γ induction (IU/mL)*
40	63.7
80	183.2

***IFN- γ producing activity of the sample cells can vary depending on cell conditions.**

IFN- γ PRODUCTION ASSAY :

- 1) KG-1 cells were cultured at 3×10^5 cells/mL for 4 days at 37°C in 5% CO₂ incubator with RPMI 1640 containing 10% fetal calf serum.
- 2) After four days of preculture, the cell concentration was adjusted to 3×10^6 cells/mL and incubated for 24 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 were recovered and the amount of IFN- γ were measured by Human IFN- γ ELISA (code# IM1743: MBL).

RESEARCH USE : For research use only. Not for use in *in vitro* diagnostic procedures for clinical diagnosis.

REFERENCE:

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- 2) Ushio S., et al. *J. Immunol.* **156**, 4274-4279 (1996)
- 3) Micallef M., et al. *Eur. J. Immunol.* **26**, 1647-1651 (1996)
- 4) Tao D, et al. *Cell Immunol.* **173**, 230-235 (1998)

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