

Recombinant Human IL-18 (without BSA)

Code No.

B003-2

Quantity

200 µg

Form

Solution

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 human IL-18 protein sequence (corresponding to 37-193 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 human IL-18 protein, measured by the LAL assay.

FORMULATION: 200 µg in 2 mL volume of PBS containing 1% sucrose.

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 -80°C. Avoid repeated freezing and thawing. 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 recombinant human IL-18 was measured using human IFN-γ ELISA.

Reference information

The activity of lot 010 was as follow:

IL-18 concentration (ng/mL)	IFN-γ induction (IU/mL)
40	73.2
80	89.3

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

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 4 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 was recovered and the amount of IFN-γ were measured by Human IFN-γ ELISA Kit (MBL, code no. IM-1743).

RELATED PRODUCTS:

Recombinant Protein	code no.
Human IL-18 (25 µg)	B001-5
Human IL-18 (25 µg, without BSA)	B003-5
Human IL-18 (200 µg, without BSA)	B003-2
Mouse IL-18 (25 µg)	B002-5
Mouse IL-18 (25 µg, without BSA)	B004-5
Mouse IL-18 (200 µg, without BSA)	B004-2
Human IL-33 (10 µg)	B005-10
Active Caspase-3 (Human, 0.1 mL)	E001

Active Caspase-7 (Human, 0.1 mL) E002

Kit		code no.
Human IL-18 ELISA Kit		7620
Mouse IL-18 ELISA Kit		7625
Human ST2 ELISA Kit		7638
Antibody	(clone) (application)	code no.
anti-Human IL-18 (25-2G)	(WB)	D043-3
anti-Human IL-18 (125-2H)	(IP, Neutralize)	D044-3
anti-Human IL-18 (159-12B)	(IP)	D045-3
Biotin labeled anti-human IL-18 (159-12B)		D045-6
anti-Human pro-IL-18	(WB)	M156-3
anti-Human IL-18 (PolyAb)	(WB, IHC)	PM014
anti-Mouse IL-18 (39-3F)	(WB)	D046-3
anti-Mouse IL-18 (74)	(IP)	D047-3
anti-Mouse IL-18 (93-10C)	(IP, Neutralize)	D048-3
Biotin labeled anti-Human IL-18 (93-10C)		D048-6
anti-Rat IL-18 (21A12)	(WB)	M157-3
anti-Rat IL-18 (91D8)	(IP)	M158-3
anti-Human IL-33 (5H1)	(WB, IP)	M138-3
anti-Human IL-33 (PolyAb)	(WB, IHC)	PM033
anti-Human ST2 (HB12)	(FCM)	D065-3
anti-Human ST2 (FB9)	(FCM)	D066-3
anti-Human ST2 (2A5)	(FCM)	D067-3
FITC labeled anti-Human ST2 (2A5)		D067-4
PE labeled anti-Human ST2 (2A5)		D067-5

080722-2