Recombinant Mouse Interleukin 18 (without BSA)

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Quantity</th>
<th>Form</th>
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<tbody>
<tr>
<td>B004-2</td>
<td>200 µg x 1 vial</td>
<td>lyophilized</td>
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**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 Mouse IL-18 protein sequence (corresponding to a.a. 36-192) 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:** Lyophilized in PBS containing 1 % sucrose. Reconstitute in 2 ml of ice-cold distilled water on ice.

**STORAGE:** Lyophilized IL-18 is stable for 24 months from the date of manufacture when stored at -20°C or below. After reconstitution, avoid repeated freeze/thaw cycles. The IL-18 can be stored for 1 week at 4°C. For storage, prepare appropriate aliquots and freeze them at -80°C.

**ACTIVITY:** Induction of IFN-γ by Mouse IL-18 receptor transfected KG-1 cell (KG-1 cell: Human myelomonocyte; ATCC CCL246) in response to the Mouse IL-18 was measured by Human IFN-γ ELISA. The activity of lot 010 is as follows:

<table>
<thead>
<tr>
<th>IL-18 conc. (ng/mL)</th>
<th>IFN-γ induction (IU/mL)*</th>
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<tbody>
<tr>
<td>20</td>
<td>180.3</td>
</tr>
<tr>
<td>40</td>
<td>264.6</td>
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*IFN-γ producing activity of the sample cells can vary depending on cell conditions.

**IFN-γ PRODUCTION ASSAY:**
1) KG-1 transfectant cells were cultured at 3X 10⁶ cells/mL for two days at 37°C in 5% CO₂ incubator with RPMI 1640.
2) After two days of preculture, the cell concentration was adjusted to 2X 10⁶ cells/mL and incubated for 46-48 hours at 37°C in 5% CO₂ incubator with RPMI 1640 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:**

October 9, 2003