

Human IL-17F Recombinant Protein Carrier-Free

Catalog Number: 34-8479

Also Known As: Interleukin-17F, IL17F

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

Product Information

Contents: Human IL-17F Recombinant Protein Carrier-Free

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Handling Conditions: For best recovery, quick-spin vial prior to opening. Use in sterile environment.

Source: E. coli expressed amino acids 31-163 of mature human IL-17F accession # NM_052872

Molecular Mass: This protein is a cysteine-linked homodimer and migrates as a 30 kDa polypeptide on non-reducing SDS-PAGE. This protein does not contain an N-terminal methionine.

Purity: > 98% as determined by SDS-PAGE


Endotoxin Level: Less than 0.01 ng/ug cytokine as determined by the LAL assay.

Bioactivity: Measured by induction of IL-6 production by NIH/3T3 cells. The ED50 is 500 ng/mL, corresponding to a specific activity of 2.0 x 10e3 Units/mg.

Formulation: Sterile liquid; 0.1 M glycine, pH 3.0

 **Temperature Limitation:** Store at less than or equal to -70°C.

 **Batch Code:** Refer to Vial

 **Use By:** Refer to Vial

Description

IL-17F is a 37kD homodimer of the IL-17 family and a signature Th17 marker. Of all the six IL-17 family members, IL-17F and IL-17A share the strongest homology (50% amino acid identity), and the two genes are located in the same chromosomal region. Recent studies have demonstrated coordinated regulation of IL-17A and IL-17F during Th17 differentiation. Expression of IL-17F and IL-17A has been detected in activated human peripheral blood lymphocytes, specifically by activated human CD4+ T cells. In addition to IL-17A, differentiated Th17 cells also produce IL-17F and IL-22 upon re-activation. Like IL-17A, IL-17F has been linked with inflammatory diseases. IL-17F and IL-17A expression has been observed in tissue samples from various autoimmune diseases, such as rheumatoid arthritis, multiple sclerosis, psoriasis, inflammatory bowel disease, and asthma. IL-17F treatment of airway epithelium, vein endothelial cells, and fibroblasts has been reported to induce expression of IL-6, IL-8, GRO- α , ENA-78, TGF- β , MCP-1, G-CSF, GM-CSF, and ICAM-1.

Like IL-17A, IL-17F is a disulfide-linked homodimeric glycoprotein. The IL-17F homodimer includes a classical cysteine knot motif, which is found also in the TGF- β , BMP, and NGF superfamilies. The presence of the cysteine knot motif suggested the possibility of a heterodimeric structure, as was reported for TGF- β and inhibin/activin. Recent reports confirm that co-expression of IL-17F and IL-17A in HEK293 cells results in the formation of biologically active IL-17F/IL-17A heterodimers, in addition to the IL-17F homodimers and IL-17A homodimers. Moreover, activated human CD4+ T cells were found to produce the IL-17A/F heterodimer, along with the corresponding homodimers. In comparing the relative potency of IL-17A, IL-17F, and IL-17A/F, all three were found to induce GRO- α secretion; IL-17A was most potent, followed by IL-17A/F heterodimer, then IL-17F (100fold lower than IL-17A). In the mouse, the IL-17A/F heterodimer (alone or in synergy with TNF- α) was found to regulate the expression of IL-6 and KC (mouse homolog of human GRO- α); this was found to be dependent on IL-17RA and TRAF6.

Applications Reported

Recombinant human IL-17F is biologically active and can promote IL-6 production in vitro. The recombinant human IL-17F is also useful as an ELISA standard.

Applications Tested

The recombinant human IL-17F has been tested as the standard in a human IL-17F sandwich ELISA and in bioassay for induction of IL-6 production by NIH/3T3 cells. The ED50 is 500.0 ng/ml, corresponding to a specific activity of 2.0 x 10E3 Units/mg.

References

- Chang, S.H., et al. 2007. A novel heterodimeric cytokine consisting of IL-17 and IL-17F regulates inflammatory responses. *Cell Res.* Advance online publication. 24 April 2007. doi: 10.1038.
- Wright, J.F., et al. 2007. Identification of an IL-17F/17A heterodimer in activated human CD4+ T cells. *JBC.* 282: 13447-13455.
- Liang, S.C., et al. 2006. IL-22 and IL-17 are coexpressed by Th17 cells and cooperatively enhance expression of anti-microbial peptides. *J. Exp. Med.* 203: 2271-2279.

Related Products

- 12-7179 Anti-Human IL-17A PE (eBio64DEC17)
- 34-8069 Human IL-6 Recombinant Protein Carrier-Free
- 34-8179 Human IL-17A Recombinant Protein Carrier-Free
- 34-8239 Human IL-23 Recombinant Protein Carrier-Free

34-8348 Human TGF beta 1 Recombinant Protein Carrier-Free
88-7176 Human IL-17A (homodimer) ELISA Ready-SET-Go![®]
88-7876 Human IL-17A ELISPOT Ready-SET-Go![®]

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