Sterile

#8928

Human Interleukin-17A (hIL-17A)

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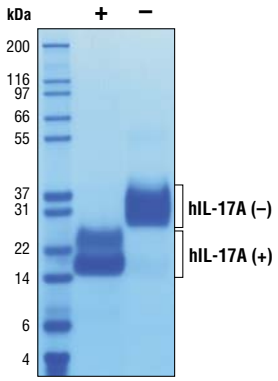
Source: Recombinant human IL-17A (hIL-17A) Ile20-Ala155 (Accession #NP_002181) was expressed in human 293 cells at Cell Signaling Technology.

Molecular Characterization: Recombinant hIL-17A contains no "tags" and the nonglycosylated protein has a calculated MW of 15,535. DTT-reduced protein migrates as a 16-24 kDa polypeptide. Heterogeneity in SDS PAGE is due to glycosylation. The non-reduced cystine-linked homodimer migrates as a 28-37 kDa protein. The expected amino-terminal IVKAG of recombinant hIL-17A was verified by amino acid sequencing.

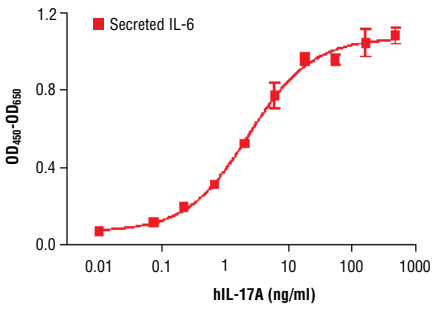
Endotoxin: Less than 0.01 ng endotoxin/1 μg hIL-17A.

Purity: >97% as determined by SDS-PAGE of 6 μg reduced (+) and non-reduced (-) recombinant hIL-17A. All lots are greater than 97% pure.

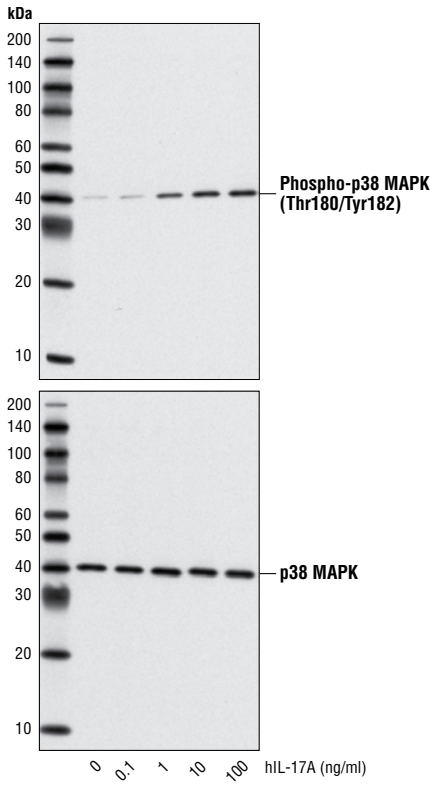


The purity of recombinant hIL-17A was determined by SDS-PAGE of 6 μg reduced (+) and non-reduced (-) recombinant hIL-17A and staining overnight with Coomassie Blue.

Bioactivity: The bioactivity of recombinant hIL-17A was determined by its ability to induce IL-6 production by primary human fibroblasts. The ED_{50} of each lot is between 1.5 - 3.5 ng/ml.



◀ *The production of IL-6 by primary human fibroblasts cultured with increasing concentrations of human IL-17A was assessed. Media from cells incubated with IL-17A for 48 hours was collected and assayed for IL-6 by ELISA and the OD_{450} - OD_{650} was determined.*



Western blot analysis of extracts from human foreskin fibroblasts untreated or treated with hIL-17A for 15 minutes, using Phospho-p38 MAPK (Thr180/Tyr182) (3D7) Rabbit mAb #9215 (upper) and p38 MAPK Antibody #9212 (lower).

Formulation: With carrier: Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.2 containing 20 μg BSA per 1 μg hIL-17A. Carrier free: Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.2.

Reconstitution:
With carrier: Add sterile PBS or PBS containing 1% bovine or human serum albumin or 5-10% FBS to a final hIL-17A concentration of greater than 50 μg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile PBS or PBS containing protein to minimize absorption of hIL-17A to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hIL-17A should be greater than 50 μg/ml.

Storage: Stable in lyophilized state at -20°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: IL-17A is a cystine-linked homodimeric pro-inflammatory cytokine produced by TH_{17} cells, a distinct CD4+ T cell lineage (1,2). IL-17A stimulates the production of the pro-inflammatory cytokines IL-1β, TNFα, and IL-6. IL-17A also induces production of the neutrophil chemoattractants IL-8, CXCL1, and CXCL6 thereby bridging adaptive and innate immunity (1,2). IL-17A is intimately involved in mucosal immunity against bacterial infections (1,3) and has a putative role in some autoimmune disorders (1,4). IL-17A effects appear to be exerted primarily through binding to the IL-17RA (5). IL-17A binding induces production of cytokines, chemokines and other proteins through activation of the ERK1/2 MAP kinase, PI3k/Akt, p38, and NFκB pathways (3,4, 6). Phosphorylation of some Jaks and Stats has been observed.

Background References:

(1) Kolls, J.K. and Lindén, A. (2004) *Immunity* 21, 467-76.

(2) Liang, S.C. et al. (2006) *J Exp Med* 203, 2271-9.

(3) Dubin, P.J. and Kolls, J.K. (2008) *Immunol Rev* 226, 160-71.

(4) Zrioual, S. et al. (2009) *J Immunol* 182, 3112-20.

(5) Wright, J.F. et al. (2008) *J Immunol* 181, 2799-805.

(6) Rahman, M.S. et al. (2006) *J Immunol* 177, 4064-71.