

# Human Interleukin-28A (hIL-28A/IFN- $\lambda$ 2)

<input type="checkbox"/> SC 10 $\mu$ g (With Carrier)	<input type="checkbox"/> SF 10 $\mu$ g (Carrier Free)
<input type="checkbox"/> LC 50 $\mu$ g (With Carrier)	<input type="checkbox"/> LF 50 $\mu$ g (Carrier Free)

Multi-milligram quantities available

New 12/10



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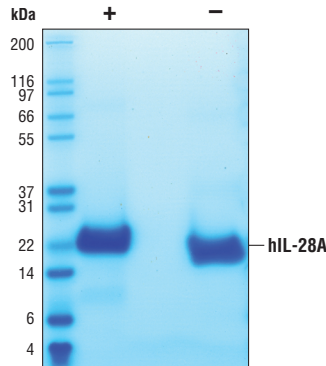
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

**Source:** Recombinant human IL-28A (hIL-28A) Val26-Val200 (Accession #NP\_742150) was expressed in human 293 cells at Cell Signaling Technology.

**Molecular Characterization:** Based on amino acid sequencing, greater than 60% of recombinant hIL-28A starts at Val26 (VPVAR) and has a calculated MW of 19,754. The remainder starts at Pro27 (PVARL) or Val28 (VARLH). DTT-reduced and non-reduced protein migrate as 21 kDa polypeptides.

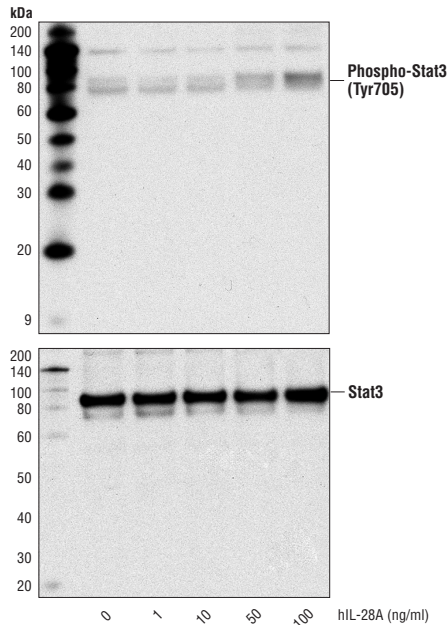
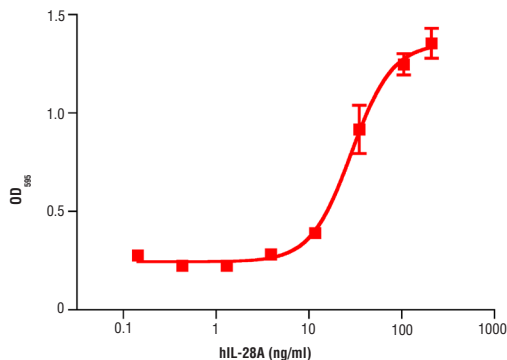
**Endotoxin:** Less than 0.01 ng endotoxin/1  $\mu$ g hIL-28A.

**Purity:** >98% as determined by SDS-PAGE of 6  $\mu$ g reduced (+) and non-reduced (-) recombinant hIL-28A. All lots are greater than 98% pure.



The purity of recombinant hIL-28A was determined by SDS-PAGE of 6  $\mu$ g reduced (+) and non-reduced (-) recombinant hIL-28A and staining overnight with Coomassie Blue.

**Bioactivity:** The bioactivity of recombinant hIL-28A was determined in a virus protection assay. The ED<sub>50</sub> of each lot is between 10-60 ng/ml.



Western blot analysis of extracts from Hep G2 cells, untreated or treated with hIL-28A for 30 minutes, using Phospho-Stat3 (Tyr705) (D3A7) Rabbit mAb #9145 (upper) and Stat3 Antibody #9132 (lower).

**Formulation:** With carrier: Lyophilized from a 0.22  $\mu$ m filtered solution of PBS, pH 7.2 containing 20  $\mu$ g BSA per 1  $\mu$ g hIL-28A.

Carrier free: Lyophilized from a 0.22  $\mu$ m 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-28A concentration of greater than 50  $\mu$ g/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-28A to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock hIL-28A should be greater than 50  $\mu$ g/ml.

**Storage:** Stable in lyophilized state at 4°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-28A is a member of the Interferon  $\lambda$  family of cytokines, which includes IL-29 and IL-28B (1). IL-28A is produced by a number of cell types and shares many functions with Type I Interferons (1-3). IL-28A exhibits anti-viral activities *in vitro* and *in vivo* (1,2). IL-28A directly inhibits tumor cell proliferation and promotes anti-tumor immune responses *in vivo* (1,3). The IL-28 receptor is a heterodimer of the IL28-R $\alpha$  and IL10-RI (1). IL-28A activates Stat1, Stat3, and Stat5 (1). IL-28R $\alpha$  expression is limited to a few cell types, including plasmacytoid DC and epithelial cells (1).

**Background References:**

- (1) Li, M. et al. (2009) *J Leukoc Biol* 86, 23-32.
- (2) Ank, N. et al. (2006) *J Virol* 80, 4501-9.
- (3) Numasaki, M. et al. (2007) *J Immunol* 178, 5086-98.

◀ The bioactivity of hIL-28A was determined in a virus protection assay. Hep G2 cells were pre-treated with increasing concentrations of hIL-28A for 24 hours. Cells were then inoculated with encephalomyocarditis virus (EMCV) and incubated for an additional 48 hours. Surviving cells were fixed and stained with crystal violet and the OD<sub>595</sub> was determined.