**Quanterix™**
The Science of Precision Health

## Description

Interleukin-28 (IL-28) is a cytokine that comes in 2 isoforms: IL-28A and IL-28B. The two isoforms are 96% homologous. It plays a role in immune defense against viruses, including the induction of the "Antiviral State." IL-28A has a molecular weight of 22.3 KDa. It exerts its immunomodulatory effect by up-regulating MHC class I antigen expression. IL-28A acts as a ligand for the heterodimeric class II cytokine receptor (IL-10RB and IFNLR1) and leads to the activation of the JACK/STAT signaling pathway, resulting in the expression of Interferon stimulated genes, which mediate the Antiviral State. IL-28A also has antitumor activity. Addition of IL-28 to influenza vaccine results in 100% protection from a lethal H1N1 Influenza challenge in a small animal model when it was paired with an Influenza vaccine that protected only 50% of the time without IL-28.

## Calibration Curve: Four-parameter curve fit parameters are depicted.



$A = 0.0136$
$B = 0.9765$
$C = 15425.5$
$D = 1.330+003$
$R^2 = 0.9995$

IL-28A pg/mL
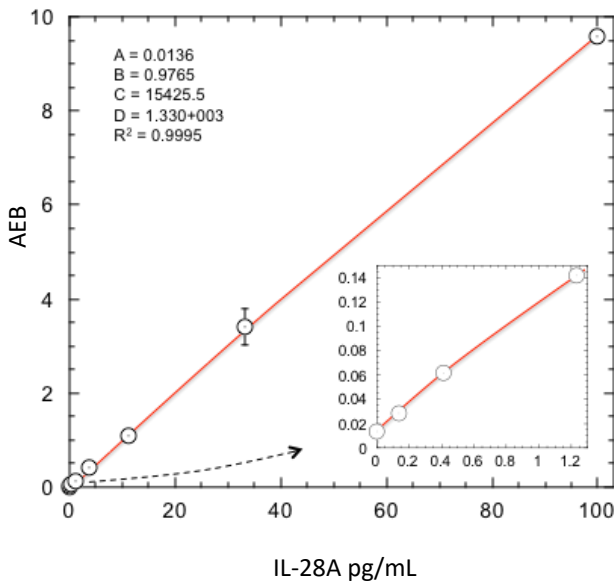
## Lower Limit of Quantification (LLOQ): Triplicate measurements of serially diluted calibrator were read back on the calibration curve over 1 reagent lot across 3 instruments (10 runs total).

## Limit of Detection (LOD): Calculated as 2.5 standard deviations from the mean of background signal read back on each calibration curve over 1 reagent lot across 3 instruments (10 runs total).

| | |
|---|---|
| **LLOQ** | **0.069 pg/mL** <br> pooled CV 7.9% <br> mean recovery 100% |
| **LOD** | **0.022 pg/mL** <br> range 0.0064–0.069 pg/mL |
| **Dynamic range** <br> **(serum and plasma)** | 0–200 pg/mL |
| **Diluted Sample volume\*** | 100 µL <br> per measurement |
| **Tests per kit** | 192 |

**\*See Kit Instruction for details**

## Endogenous Sample Reading: Healthy donor matched EDTA plasma (n=6) and serum (n=8) were measured. Error bars depict median and interquartile ranges. 4 plasma samples and 2 serum samples were below the LOD of the assay.
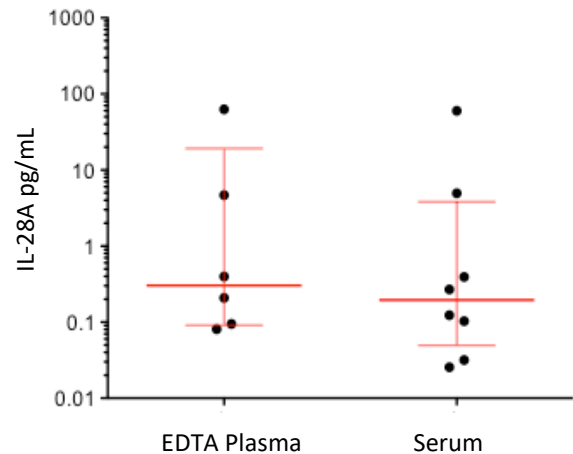


| Sample Type | Median IL-28A pg/mL | % Above LOD |
|---|---|---|
| EDTA Plasma | 0.303 | 60% |
| Serum | 0.196 | 80% |

**Precision:** Representative precision was estimated with repeated assay of serum and plasma panels using one instrument and one reagent lot. Within-run and between-run CVs are depicted in the following table. Within-run CVs reflect average CVs across 5 experiments of 3 replicates each.

| Sample | Mean (pg/mL) | Within run CV | Between run CV |
|---|---|---|---|
| Plasma Panel 1 | 2.23 | 9.4% | 12.4% |
| Serum Panel 2 | 10.1 | 4.4% | 15.4% |
| Plasma Panel 3 | 60.0 | 6.9% | 7.1% |

**Spike and Recovery:** IL-28A spiked into 4 serum samples at 2 levels.

**Dilution Linearity:** Spiked serum diluted 2x serially from MRD (2x) to 128x with Sample Diluent.

| Spike and Recovery (Serum) | Mean = 99.2% Range: 82.5–121% |
|---|---|
| Dilution Linearity (128x) | Mean = 113.8% Range: 108.3–122.5% |