Quanterix™
The Science of Precision Health

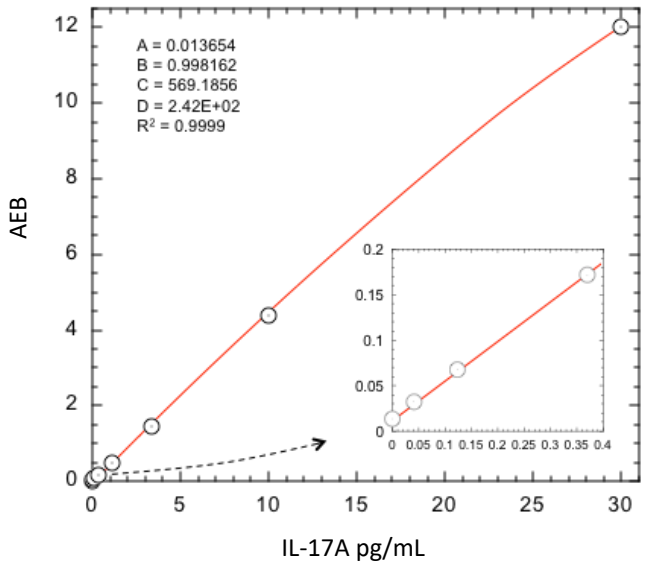
Simoa® IL-17A Advantage Kit
HD-1/HD-X Data Sheet

Item 101599

Description

Interleukin 17A (IL-17A) is disulfide-linked homodimeric cytokine of 155 amino acids (molecular weight 35kDa) and a member of an IL-17 family of related cytokines (IL-17B through IL-17F). All IL-17 cytokines have a similar protein structure, and no sequence similarity to any other cytokines. These cytokines are well conserved in mammals, with significant sequence conservation between the human and mouse homologs. A major role of IL-17A is its involvement in inducing and mediating proinflammatory responses. It acts as a potent mediator in delayed-type reactions by increasing chemokine production in various tissues to recruit monocytes and neutrophils to the site of inflammation, similar to interferon gamma. IL-17A is produced by T-helper cells and is induced by IL–23 which results in destructive tissue damage in delayed-type reactions. IL-17 induces the production of many other synergistic cytokines, including GM-CSF, IL-6, IL-1β, and TNFα. The IL-17 family has been linked to many immune/autoimmune related diseases including rheumatoid arthritis, asthma, lupus, allograft rejection, anti-tumor immunity and recently psoriasis.

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



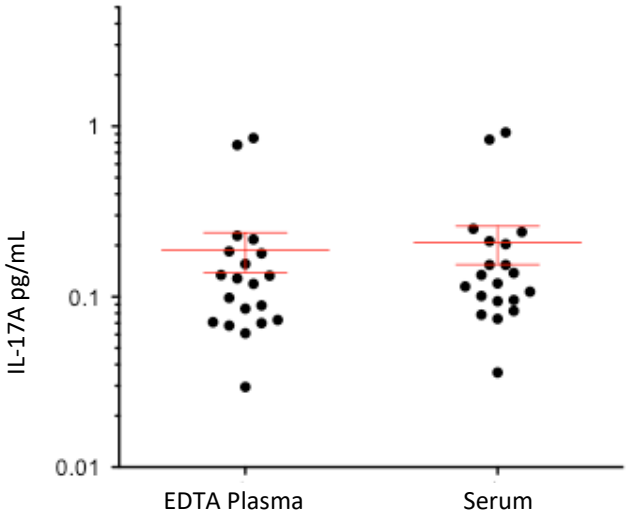
Lower Limit of Quantification (LLOQ): Triplicate measurements of serially diluted calibrator were read back on the calibration curve over 2 reagent lots across 3 instruments (12 runs total).

Limit of Detection (LOD): Calculated as 2.5 standard deviations from the mean of background signal read back on each calibration curve over 2 reagent lots across 3 instruments (12 runs total).

LLOQ	**0.021 pg/mL**
LOD	**0.0042 pg/mL** SD 0.0031 pg/mL
Dynamic range (serum and plasma)	0–120 pg/mL
Diluted Sample volume*	100 µL per measurement
Tests per kit	96

***See Kit Instruction for details**

Endogenous Sample Reading: Healthy donor matched EDTA plasma (n=20) and serum (n=20) were measured. Error bars depict mean and SEM.



Sample Type	Median IL-17A pg/mL	% Above LOD
Serum	0.127	100%
Plasma	0.124	100%

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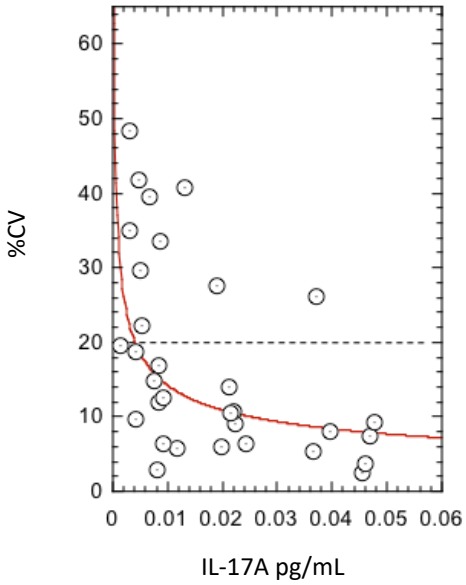
Sample Dose CV Profile: Triplicate measurements of diluted serum samples assayed over multiple runs (34 measurements).



Precision: Five samples consisting of two serum-based panels, one plasma-based panel, and two IL-17A controls were assayed in replicates of three at two separate times per day for five days using a single lot of reagents and calibrators. Analysis of variance (fully nested ANOVA) results are summarized in the following table.

Sample	Mean (pg/mL)	Within run CV	Between run CV	Between day CV
Control 1	0.505	4.4%	4.0%	0.0%
Control 2	26.1	4.2%	7.4%	0.0%
Panel 1	0.164	6.1%	3.0%	3.7%
Panel 2	2.37	4.4%	0.8%	0.0%
Panel 3	8.45	4.5%	9.9%	0.0%

Spike and Recovery: IL-17A spiked into 4 serum samples at 2 levels.

Admixture Linearity: High IL-17A serum sample admixed with low IL-17A sample, mean of 10 levels.

Dilution Linearity: Diluted 2x serially from MRD (4x) to 256x with Sample Diluent.

Lot Consistency: 5 samples tested with 2 reagent lots across 2 runs x 3 instruments.

Spike and Recovery (Serum)	**Mean = 99.2%** Range: 93.5–107%
Admixture Linearity	**Mean = 97.1%**
Dilution Linearity (256x)	**Mean = 107%** Range: 95–119%
Lot Consistency	**Mean Difference = 7.3%** Range: 0.424–31.4 pg/mL

The Simoa IL-17A Advantage assay kit is formulated for use on the SR-X®, HD-1, or HD-X® platform. Data in this document was obtained from runs on the HD-1 platform unless otherwise noted. Some differences in performance claims between SR-X and HD-1/HD-X may be observed when comparing datasheets for these platforms. This may be due to experiments run at different time-points with different reagent lots and different samples, or it may be due to minor differences in antibody and analyte behavior in the different assay formats.

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