Quanterix™
The Science of Precision Health

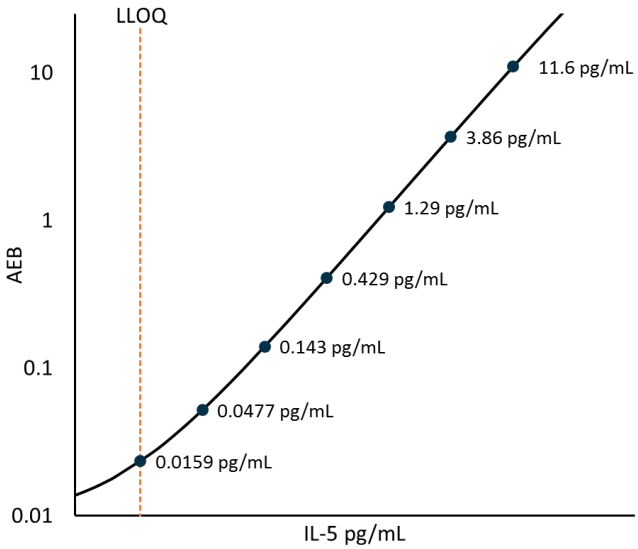
Simoa® IL-5 Advantage Kit
HD-1/HD-X Data Sheet

Item 102860

Description

Interleukin 5 (IL-5) is a cytokine with a length of 115 amino acids and a molecular weight of 15.2 kDa that is derived from T-cells with hematopoietic functions predominantly associated with antigen-induced eosinophilia. IL-5 induces differentiation of B-cells to immunoglobulin secreting cells and is an important factor in growth, differentiation and activation of eosinophils. IL-5, GM-CSF and IL-3 comprise the β-common (βc) cytokine family, so named because the receptors share a common β chain complexed with cytokine-specific α chains. IL-5 and IL-5R are the targets of therapeutic antibodies for treatment of eosinophilic asthma and are involved in type 2 inflammation in the mucosal allergic reaction to grass pollen. Activation of the IL-3/IL-5/GM-CSF receptors results in rapid activation of the JAK/STAT pathway.

Calibration Curve: Calibrator concentrations and Lower Limit of Quantification depicted.



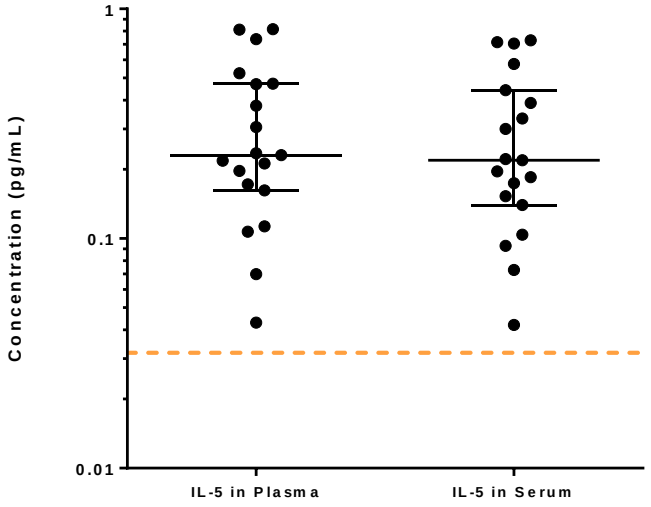
Lower Limit of Quantification (LLOQ): Triplicate measurements of serially diluted calibrator were read back on the calibration curve over 14 runs total over 2 reagent lots across 3 instruments.

Limit of Detection (LOD): Calculated as 2.5 standard deviations from the mean of background signal read back on each calibration curve over 14 runs total over 2 reagent lots across 3 instruments.

LLOQ	**0.0165 pg/mL** pooled CV 18% mean recovery 98%
LOD	**0.0041 pg/mL** range 0.0017-0.0105 pg/mL
Dynamic range (serum and plasma)	0 - ~12 pg/mL
Diluted Sample volume*	152 µL per measurement
Tests per kit	96

***See Kit Instruction for details**

Endogenous Sample Reading: Healthy donor matched EDTA plasma (n=19), and serum (n=19) were measured. Bars depict median with interquartile range. Orange line represents functional LLOQ.



Sample Type	Mean IL-5 pg/mL	Median IL-5 pg/mL	% Above LOD
Serum	0.31	0.22	100%
Plasma	0.33	0.23	100%

Precision: Measurements of 3 serum-based panels and 2 calibrator-based controls. Triplicate measurements were made for 14 runs total over 2 reagent lots across 3 instruments.

Sample	Mean (pg/mL)	Within run CV	Between run CV	Between inst CV	Between Lot CV
Control 1	0.32	4.1%	13.0%	7.9%	14.4%
Control 2	5.30	4.6%	14.3%	5.9%	15.8%
Panel 1	0.56	3.8%	8.3%	4.2%	4.6%
Panel 2	1.30	4.0%	8.1%	6.2%	5.9%
Panel 3	5.03	6.5%	10.4%	5.5%	10.0%

Spike and Recovery: 2 serum and 2 EDTA plasma samples were spiked at high and low concentrations within the range of the assay and analyzed on HD-1.

Dilution Linearity: 2 EDTA plasma (1 endogenous and 1 spiked) and 2 serum samples (1 endogenous and 1 spiked) were diluted 2x serially from MRD (2x) to 32x (endogenous) or 256x (spiked).

Spike and Recovery (Serum/Plasma)	**Mean = 85%** Range: 71-90%
Endogenous Dilution Linearity (32x)	**Mean = 113%** Range: 98–130%
Spiked Dilution Linearity (256x)	**Mean = 113%** Range: 95–139%

The Simoa IL-5 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 the 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 may be due to minor differences in antibody and analyte behavior in the different assay formats.