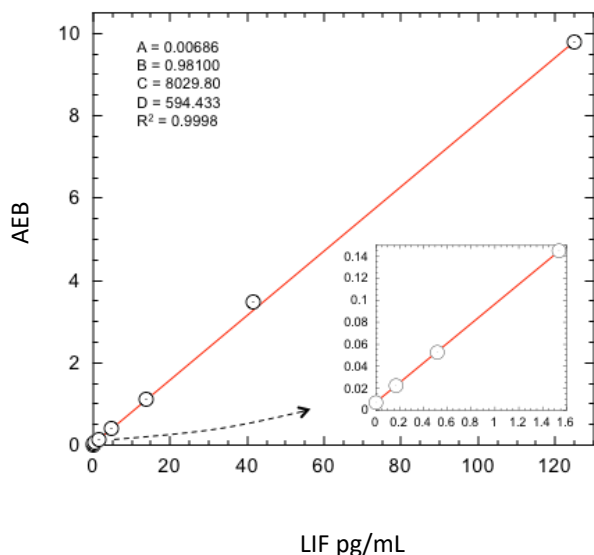## Description

Leukemia inhibitory factor (LIF) is a polyfunctional glycoprotein and member of the IL-6 superfamily of cytokines. LIF binds to the LIF receptor (LIFR) and gp130 to exert its effects through multiple signal transduction pathways including JAK/STAT3, PI3K/AKT, ERK1/2, and mTOR. LIF receptors can be found in liver, bone, uterus, kidney, and nerve tissue. Its association with major signal transduction pathways and presence in multiple tissues explain LIF's many pleiotropic effects, which include roles in development, self-renewal, metabolism, tumor progression, and inflammation. Although LIF has been shown to inhibit Leukemia, the effect of LIF has on cancer depends on the type. LIF can promote metastasis in certain cancers of the skin, breast, uterus, and bone. Cytokine-mediated expression of LIF leads to the breakdown of cartilage in articular chondrocytes. This inflammatory process may be responsible for the cartilage degradation observed in rheumatoid arthritis.

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

A = 0.00686
B = 0.98100
C = 8029.80
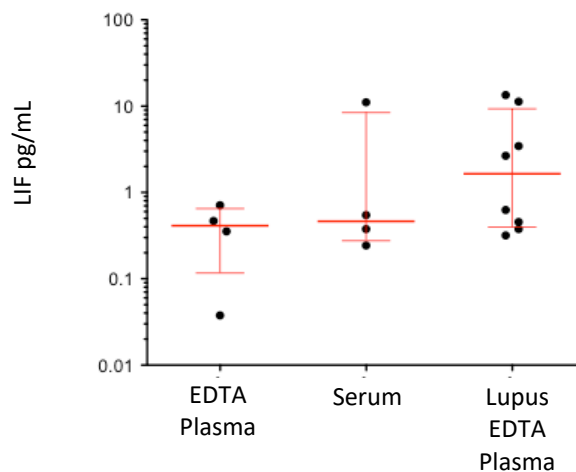D = 594.433
R^2 = 0.9998

LIF 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 2 instruments (5 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 2 instruments (5 runs total).

LLOQ	**0.086 pg/mL** pooled CV 14% mean recovery 94.6%
LOD	**0.015 pg/mL** range 0.0065–0.0230 pg/mL
Dynamic range (serum and plasma)	0–520 pg/mL
Diluted Sample volume*	100 µL per measurement
Tests per kit	192

**See Kit Instruction for details*

Endogenous Sample Reading: Healthy donor matched EDTA plasma (n=4) and serum (n=4) were measured. EDTA plasma from lupus patients (n=8) was measured. 6 of 10 normal serum and normal plasma samples and 2 of 10 lupus plasma samples were below the LOD. Error bars depict median and interquartile ranges.

Sample Type	Median LIF pg/mL	% Above LOD
EDTA Plasma (Healthy)	0.412	40%
Serum (Healthy)	0.463	40%
EDTA Plasma (Lupus)	1.649	80%

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Precision: Representative precision was estimated with repeated assay of serum 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
Serum Panel 1	16.1	3.8%	7.1%
Serum Panel 2	36.4	3.9%	7.1%
Serum Panel 3	82.6	7.6%	11.8%

Spike and Recovery: LIF spiked into 2 serum and 2 plasma samples at 2 levels.

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

Spike and Recovery (Serum/Plasma)	**Mean = 107%** Range: 92–127%
Dilution Linearity (256x)	**Mean = 94.2%** Range: 85.8–108%

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