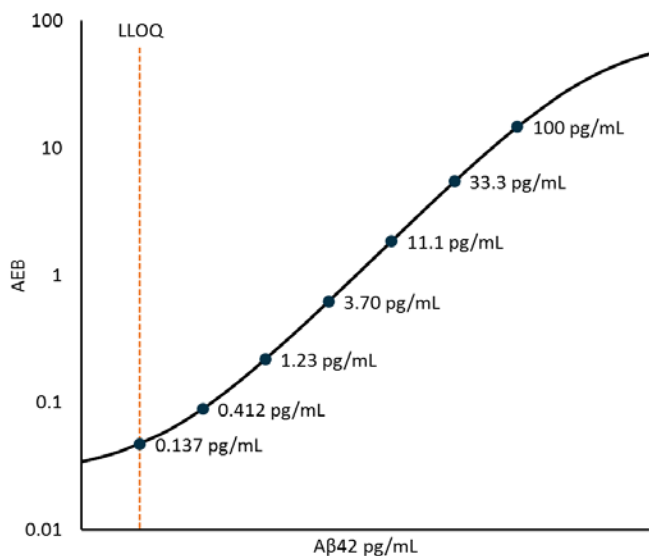


**Description**

Aβ42 is a 42 amino acid proteolytic product from the amyloid precursor protein that has gained considerable attention as a biomarker correlating with Alzheimer’s disease (AD) onset, mild cognitive impairment, vascular dementia, and other cognitive disorders. Amyloid beta (Aβ) peptides (including the shorter Aβ38 and Aβ40 isoforms) are produced by many cell types in the body but the expression is particularly high in the brain. Accumulation of Aβ in the form of extracellular plaques is a neuropathological hallmark of AD and thought to play a central role in the neurodegenerative process. Substantial clinical validation has now been developed around disease relevance of cerebrospinal fluid (CSF) levels of Aβ42, and there follows a significant interest in measuring blood levels of this marker. Concentrations of Aβ42 in blood are over 100-fold lower than in cerebrospinal fluid, (typically single pg/mL range), requiring very high analytical sensitivity for its reliable measurement.

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



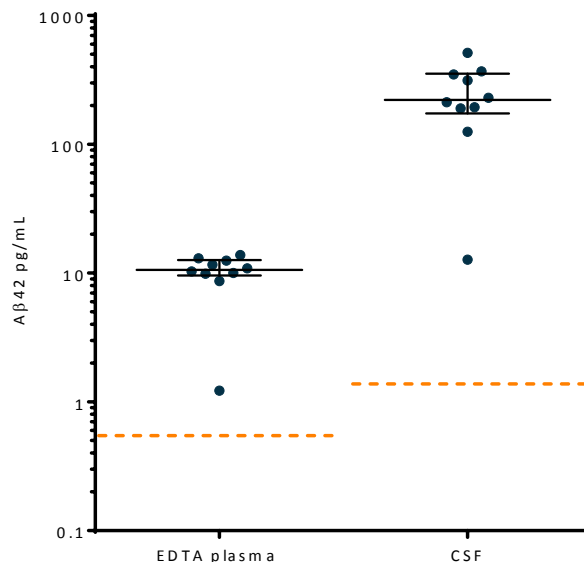
**Lower Limit of Quantification (LLOQ):** Triplicate measurements of serially diluted calibrator were read back on the calibration curve over 3 runs each for 1 reagent lot across 2 instruments (6 runs total).

**Limit of Detection (LOD):** Calculated as 2.5 standard deviations from the mean of background signal read back on each calibration curve over 3 runs each for 1 reagent lot across 2 instruments (6 runs total).

<b>LLOQ</b>	<b>0.137 pg/mL</b> pooled CV 5.5% mean recovery 103%
<b>LOD</b>	<b>0.0348 pg/mL</b> range 0.0147-0.0524 pg/mL
<b>Dynamic range (plasma)</b>	0–400 pg/mL
<b>Dynamic range (CSF)</b>	0-1000 pg/mL
<b>Diluted Sample volume*</b>	100 μL per measurement
<b>Tests per kit</b>	96

\*Plasma diluted 1:4 and CSF diluted 1:10. See Kit Instruction for details

**Endogenous Sample Reading:** Healthy donor EDTA plasma samples (n=10) and unmatched CSF (n=10) samples were measured. Bars depict median with interquartile range. Orange line represents functional LLOQ.



Sample Type	Mean Aβ42 pg/mL	Median Aβ42 pg/mL	% Above LOD
EDTA plasma	10.2	10.6	100%
CSF	251	221	100%

**Precision:** Measurements of 3 EDTA plasma-based panels, 1 CSF based panel, and 2 calibrator-based controls. Triplicate measurements were made for 3 runs each for 1 reagent lot across 2 instruments (6 runs total, 18 measurements).

Sample	Mean (pg/mL)	Within run CV	Between run CV	Between inst CV
Control 1	1.34	8.1%	13.0%	6.6%
Control 2	40.9	4.4%	13.3%	8.8%
Panel 1	1.43	6.9%	12.1%	6.7%
Panel 2	11.7	4.1%	7.6%	2.6%
Panel 3	14.6	3.7%	7.8%	4.5%
Panel 4	53.1	4.1%	11.4%	6.0%

**Spike and Recovery:** 2 EDTA plasma samples were spiked at high and low concentrations within the range of the assay and analyzed on SR-X.

**Dilution Linearity:** A spiked EDTA plasma sample was diluted 2x serially from MRD (4x) to 512x with sample diluent.

<b>Spike and Recovery</b>	<b>Mean = 68%</b> Range 61-75%
<b>Dilution Linearity (512x)</b>	<b>Mean = 111%</b> Range: 92-118%

The Simoa Aβ42 assay kit is formulated for use on either the SR-X or HD-1 platform. Data in this document was obtained from runs on the SR-X platform unless otherwise noted. Some differences in performance claims between the HD-1 and SR-X may be observed when comparing datasheets for the two 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.