simoa®

NEUROLOGY

Blood Markers of Brain Health

The Simoa® Platform—Measuring CNS biomarkers in serum and plasma with ultrasensitivity.

Quanterix®

Quanterix®

The Simoa® Platform

A *better* way to measure CNS biomarkers with Simoa® ultrasensitivity.

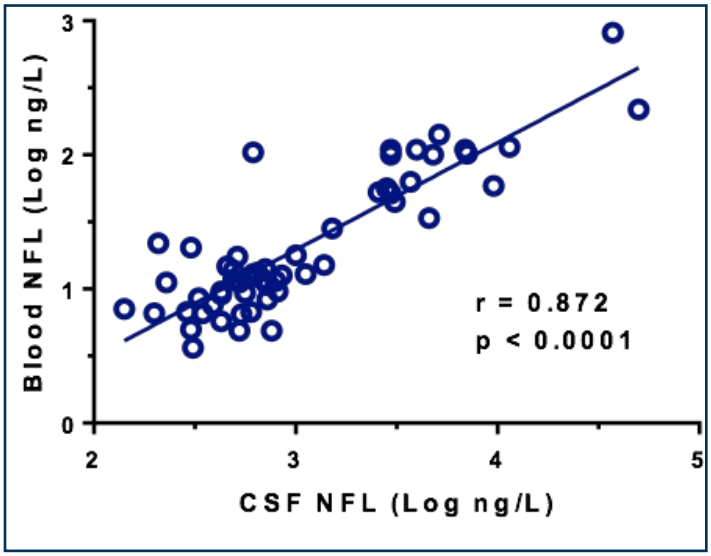
With a sensitivity many times greater than traditional ELISA methods, the Simoa® Platform is so sensitive it can measure brain biomarkers in blood, offering you another dimension of data from a readily available, non-invasive source.

Suddenly new areas of research become practical. Your productivity will increase. Most important, you'll have access to CNS biomarker data at a level never before possible.

Now you can:

- Use serum or plasma to measure CNS biomarkers at both acute and normal levels
- Understand a neurological disorder's long-term effects by measuring associated biomarkers earlier in its progression
- Achieve better, more efficient, sample stratification
- Understand the taxonomy of neurological disorders by detecting multiple biomarkers simultaneously
- Help enroll the subjects for clinical trials by quickly and non-invasively detecting associated biomarkers

Measuring Neurofilament light in blood and CSF



The Simoa® Platform measures CNS biomarkers in serum, plasma and CSF with high sensitivity and precision. Correlation between blood and CSF levels has been demonstrated for a number of biomarkers, including Neurofilament light chain (Gisslén M et al., EBioMedicine. 2015 Nov 22;3:135-40).

Great accuracy and dynamic range.

Because of our digital approach, and an automated system that reduces human error, the Simoa® Platform delivers very precise results—with coefficient of variations below 20%. The platform also offers a large dynamic range >4 logs by using an algorithm the takes advantage of digital measurements at low concentrations and analog measurements at higher concentrations.

Simoa HD-X Analyzer®

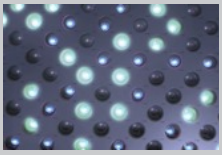
In the past, running immunoassays was a time consuming, largely manual technique. No more.

The HD-X Analyzer simplifies the process by performing every step of the assay, improving efficiencies while providing consistent, reliable results. It is a fully automated solution that traps single molecules in femtoliter-sized wells, giving you a digital readout of every bead that is bound to the target analyte.

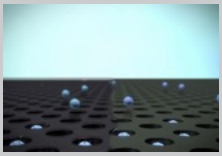
Sample in. Results out.

Using an intuitive control panel, the user selects the appropriate assay.

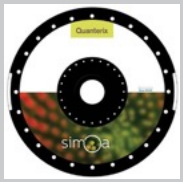
Users simply load their sample (serum, plasma or cerebrospinal fluid) and assay- specific reagents into the HD-X Analyzer.



The fully automated system captures the immunocomplexes onto antibody- coated paramagnetic beads.



The captured immunocomplexes receive enzyme labels and individual beads are isolated and sealed in wells in the presence of a fluorogenic enzyme substrate.



Simoa® assay technology enables detection of single molecules bound to each bead enabling digital measurements with high precision and sensitivity.

Results are analyzed using our proprietary algorithms and can be viewed right on the touchscreen, or exported to commonly used software and LIMS systems.

Performance

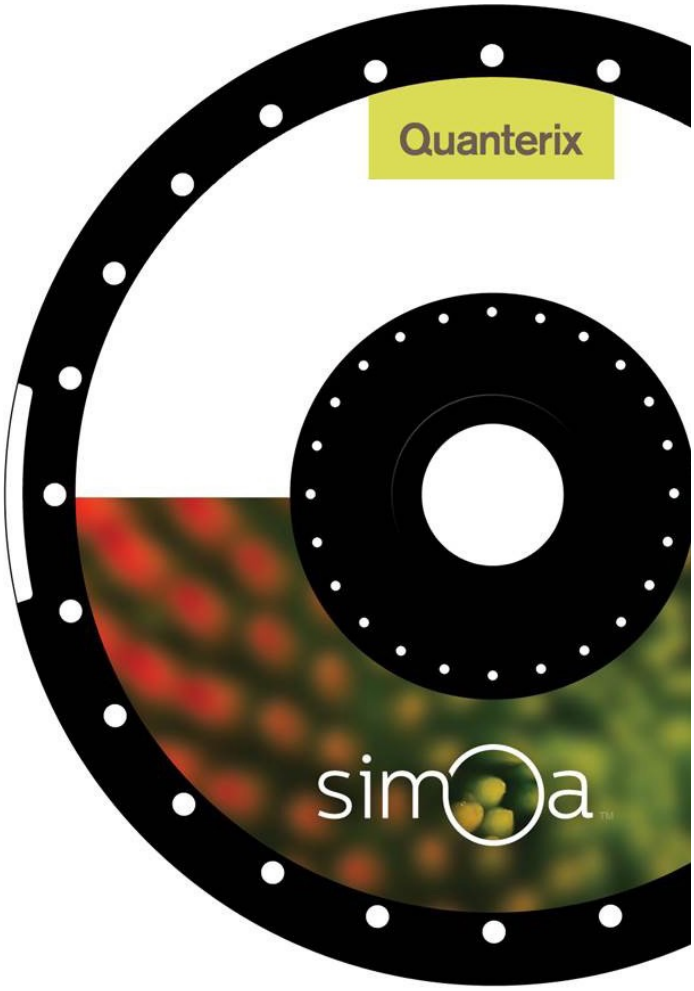
Throughput: Up to 1,152 data points per shift
Sample Input: 96-well plate or tubes
Total Assay Time: <2.5 hours per 96 samples
Hands on Time: <30 minutes
Multiplex Capability: Up to 4-plex

Assays designed around your needs.

Whether you are working in neurodegeneration, neuroinflammation, alzheimer's disease (AD), traumatic brain injuries (TBI) or multiple sclerosis (MS) research, the Simoa® Platform has a full range of assays—including those measuring Tau and Neurofilament light chain. If you have specialized needs, the Simoa® Platform includes easy-to-use reagent kits and protocols for custom assay development.

Using our assays, you can:

- Measure biomarkers associated with Alzheimer's, Parkinson's disease, Multiple Sclerosis and other neurological disorders
- Measure plasma and exosomal derived protein biomarkers to differentiate neurodegenerative disorders
- Support PK/PD studies during therapeutic development
- Measure even small changes in biomarker concentration during clinical trials
- Predict clinical outcomes of TBI and concussions

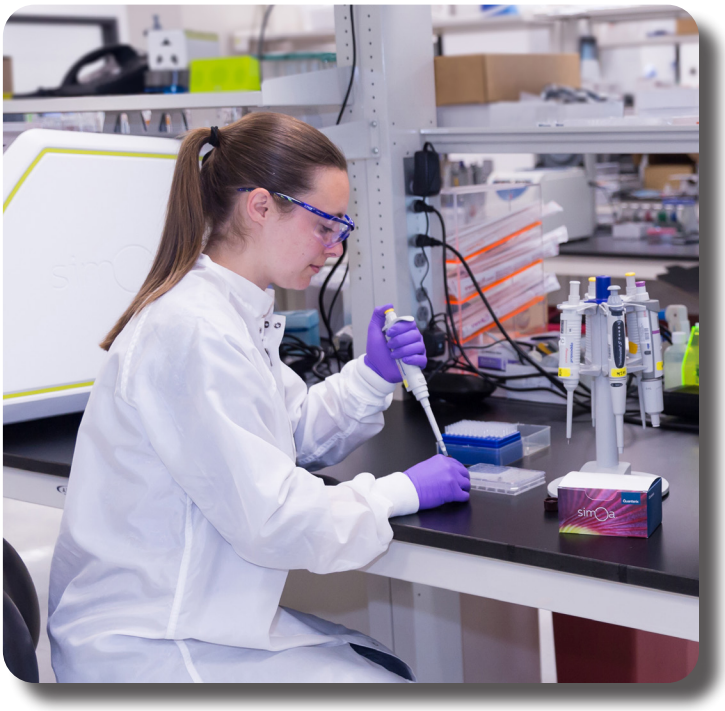


Ultrasensitive Simoa® Assays for Neurology

	Nf-light	GFAP*	Tau	pTau-181	pTau-231 (CSF)	SNAP-25 (CSF)	TDP-43	BDNF	Inflammatory Cytokines	Neuro 2-Plex (NF-light, GFAP)	Neuro 3-Plex A (Tau, Aβ42, Aβ40)	Neuro 4-Plex A/B (Nf-L, TAU, GFAP*, UCH-L1*)	Neuro 4-Plex E (Aβ40, Aβ42, GFAP*, Nf-L)
Alzheimer's Disease	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Multiple Sclerosis	✓	✓							✓	✓			
Traumatic Brain Injury	✓	✓	✓	✓				✓	✓	✓		✓	✓
Amyotrophic Lateral Sclerosis	✓	✓					✓	✓	✓	✓			
Frontotemporal Dementia	✓	✓					✓	✓	✓	✓			
Stroke	✓	✓	✓							✓		✓	
Parkinson's Disease	✓		✓	✓	✓				✓				
Epilepsy	✓		✓	✓	✓				✓				
Major Depressive Disorder	✓							✓	✓				
Spinocerebellar Ataxia	✓	✓	✓							✓		✓	
Brain Hypoxia	✓	✓	✓							✓	✓	✓	✓
Huntington	✓						✓						
Neurotoxicity	✓	✓								✓			
Infectious disease associated neuronal injury	✓	✓								✓			
Prion diseases	✓		✓									✓	
Spinal Muscular Atrophy	✓												
Brain Metastases	✓	✓								✓			
Intensive Care and Surgery	✓	✓								✓		✓	

The Simoa® Accelerator Laboratory: your easy-to-access link to the Simoa® Platform.

All of the benefits of The Simoa® Platform are available to you through the Simoa® Accelerator Laboratory. By using this service, you gain access to a dedicated laboratory and trained professionals ready to help you with custom assay development, reagent development, formulation and sample testing. There is simply no easier, faster way of accelerating and improving CNS biomarker detection.



The Simoa® Platform in action.

Plasma Nf-L increases in pre-symptomatic patients in the FTD spectrum.*

Blood Nf-L is increased in patients with FTD and it correlates with disease parameters. Studies demonstrated that the Simoa® Nf-L assay can detect this elevation prior to symptoms. This would enable recruitment of patients about to phenoconvert to FTD in prevention trials. Simoa® Nf-L is presented as a great choice of a biomarker for enrollment.

**The complete articles, "Comprehensive cross-sectional and longitudinal analyses of plasma neurofilament light across FTD spectrum disorders" published in Cell Reports Medicine and "Temporal order of clinical and biomarker changes in familial frontotemporal dementia" published in Nature Medicine can be referred to at www.quanterix.com.*

Not only Nf-L, but also blood-based GFAP offers value in understanding stroke.*

Blood neurofilament has been extensively demonstrated to offer monitoring and prognostic value in patients with ischemic stroke, recurrent ischemic stroke and recent small subcortical infarct compared to the controls. Recently, Simoa® GFAP was demonstrated to associate with clinical and imaging measures in Sporadic Small Vessel Disease, a leading cause of Stroke.

**The complete article, "Association of Serum GFAP with Functional and Neurocognitive Outcome in Sporadic Small Vessel Disease", published in Biomedicines, is available at www.quanterix.com.*

Blood Nf-L predicts development of neurotoxicity after CAR T-cell therapy.*

Recently, two studies have used Simoa® Nf-L assay to measure neuronal injury in patients receiving CAR-T cell therapy, pre- and post- infusion. As would be expected, Nf-L levels are increased in patients who suffer immune effector cell-associated neurotoxicity syndrome (ICANS). Most importantly, pre-infusion levels of Nf-L are higher in patients who will develop ICANS, revealing neuronal injury is present in patients at risk of neurotoxicity and the potential of blood Nf-L as a CAR T-cell therapy neuro safety screening.

**The complete articles, "Assessment of Pretreatment and Posttreatment Evolution of Neurofilament Light Chain Levels in Patients Who Develop Immune Effector Cell–Associated Neurotoxicity Syndrome" published in JAMA Oncology and "Neurofilament light chain serum levels correlate with the severity of neurotoxicity after CAR T-cell treatment" published in Blood Advances, is available at www.quanterix.com*

About Quanterix

From discovery to diagnostics, Quanterix's technology is fueling breakthroughs only made possible through its unparalleled sensitivity and flexibility. The Company's Simoa® technology has delivered the gold standard for earlier biomarker detection in blood, serum or plasma, with the ability to quantify proteins that are far lower than the Limit of Quantification (LoQ) of conventional analog methods. Its industry-leading precision instruments, digital immunoassay technology and CLIA-certified Accelerator laboratory have supported research that advances disease understanding and management in neurology, oncology, immunology, cardiology and infectious disease. Quanterix has been a trusted partner of the scientific community for nearly two decades, powering research published in more than 2,000 peer-reviewed journals. Find additional information about the Billerica, Massachusetts-based company at www.quanterix.com or follow us on Twitter and LinkedIn.

For more information: Visit quanterix.com or email sales@quanterix.com to learn what the Simoa® Accelerator Laboratory can do for you.

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