



## Assays to Detect Proteins Signaling Neurologic Injury Following Stroke

Stroke is a severe neurological event that can have long-term implications, including cognitive and motor deficits, long-term disability, and increased risk of recurrent stroke. Biomarkers such as neurofilament light (NfL), glial fibrillary acidic protein (GFAP), and tau proteins are particularly relevant to stroke research. Elevated levels of these biomarkers have been associated with neurological injury and can be used to assess the extent of damage and predict outcomes. Despite this elevation, biomarker levels remain low and require advanced technology with ultrasensitive measurement capabilities for accurate detection.

Simoa® technology allows researchers to accurately measure cerebrospinal fluid (CSF) and blood biomarkers at femtogram-level concentrations - far below the Lower Limit of Quantification (LLOQ) of conventional immunoassays. This technology allows for earlier detection of neurological injury and provides a critical window for intervention to improve patient outcomes and develop new treatment approaches.

## Solutions to Advance Your Research

### OPTIONS OF SIMOA®:

- Purchase assays for use on the Quanterix SR-X™, or Simoa HD-X™ Analyzer platform
- Submit samples to our **Accelerator Laboratory** for analysis
- Choose between singleplex and multiplex assay options to measure NfL alone or with other biomarkers of interest, including GFAP, UCH-L1, and tau

### BENEFITS OF SIMOA®:

- Access biomarker data with unparalleled sensitivity and accuracy
- Study health and disease with a less invasive approach
- Transform the way we detect diseases
- Advance scientific understanding of physiological effects, prognosis, and management of stroke

**SR-X™ Biomarker Detection System**  
The first benchtop instrument to offer true multiplex detection at both acute and baseline levels.



**HD-X™ Analyzer**  
Delivering fully-automated ultra sensitive biomarker detection you can count on.



## Simoa® Technology Enables Best-in-Class Research to Advance Scientific Breakthroughs in Stroke

Quanterix's ultrasensitive Simoa® technology offers a non-invasive screening method to facilitate biomarker data generation and assist scientists and clinicians in their research. Below is a curated list of peer-reviewed publications that use Quanterix Simoa® technology in stroke research.

Diagnostic performance of Glial Fibrillary Acidic Protein and Prehospital Stroke Scale for identification of stroke and stroke subtypes in an unselected patient cohort with symptom onset < 4.5 h

Scand J Trauma Resusc Emerg Med (2023)  
doi.org/10.1186/s13049-022-01065-7

Rapid Activation of Neuroinflammation in Stroke: Plasma and Extracellular Vesicles Obtained on a Mobile Stroke Unit.

Stroke (2023)  
doi.org/10.1161/STROKEAHA.122.041422

Early plasma biomarker dynamic profiles are associated with acute ischemic stroke outcomes

Eur J Neurol (2022)  
doi.org/10.1111/ene.15273

Acute Neurofilament Light Chain Plasma Levels Correlate with Stroke Severity and Clinical Outcome in Ischemic Stroke Patients

Front Neurol (2020)  
doi.org/10.3389/fneur.2020.00448

Diagnosis of Ischemic Stroke Using Circulating Levels of Brain-specific Proteins Measured Via High-sensitivity Digital Elisa

Brain Res (2020)  
doi.org/10.1016/j.brainres.2020.146861

Ultra-Early Differential Diagnosis of Acute Cerebral Ischemia and Hemorrhagic Stroke by Measuring the Prehospital Release Rate of GFAP

Clin Chem (2021)  
doi.org/10.1093/clinchem/hvab128

Neurofilament light is associated with clinical outcome and hemorrhagic transformation in moderate to severe ischemic stroke

J Cent Nerv Syst Dis (2023)  
doi.org/10.1177/11795735221147212

Serum GFAP for stroke diagnosis in regions with limited access to brain imaging (BE FAST India)

Eur Stroke J (2021)  
doi.org/10.1177/23969873211010069

Serum neurofilament light chain levels are correlated with the infarct volume in patients with acute ischemic stroke

Medicine (2022)  
doi.org/10.1097/MD.00000000000030849



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