



Simoa® technology enables breakthrough research.

In late 2021, Quanterix announced that its Simoa® phospho-Tau 181 (pTau181) blood test was granted **Breakthrough Device Designation by the U.S. Food and Drug Administration (FDA)** as an aid in diagnostic evaluation of Alzheimer's Disease (AD). A distinction not shared by any other company

This designation is a major milestone for AD research and underscores the potential of the Simoa technology to revolutionize AD research and help bring much needed clarity to what has been a very complex and difficult disease to diagnose.

The need for a more sensitive method of measuring pTau181, a critical biomarker associated with Alzheimer's Disease (AD), is becoming increasingly important as we continue to see a rise in this disease worldwide. Researchers globally have demonstrated that the Simoa pTau181 assay by Quanterix plays a pivotal role in the pursuit of breakthroughs in early detection and prevention of AD.

QUANTERIX OFFERS THE FOLLOWING OPTIONS BASED ON YOUR RESEARCH NEEDS.

- Purchase assay Simoa 181 assay kits, available on either the HD-X or SR-X testing platforms
- Submit samples to our Accelerator Laboratory for analysis
- Partner with us to customize your own pTau181 assay that suit your research goals

simOa TECHNOLOGY SYSTEMS

The Quanterix SR-X™:

The first benchtop instrument to offer true multiplex detection at both acute and baseline levels.



The Simoa HD-X Analyzer™:

Delivering fully-automated ultra sensitive biomarker detection you can count on.

Visit [quanterix.com](https://www.quanterix.com) for more information



For more information or scan the QR code with your smart phone camera to be directed to a complete archive of publications.

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Quanterix provides industry leading ultrasensitive biomarker detection devices and technology. Our Simoa precision instruments, wide-ranging menu of assay kits, and custom assay development services empower researchers to bring new discoveries in disease and treatment to the forefront and help transform the future of healthcare.

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Simoa pTau181 assay has powered more than 60 peer-reviewed publications on the alone in 2022

Diagnostic and prognostic value of serum NfL and p-Tau(181) in frontotemporal lobar degeneration.

Journal of neurology, neurosurgery, and psychiatry.
doi:10.1136/jnnp-2020-323487

Individualized prognosis of cognitive decline and dementia in mild cognitive impairment based on plasma biomarker combinations.

Nature Aging. 2020/11/30 2020
doi:10.1038/s43587-020-00003-5

Plasma phosphorylated tau181 and neurodegeneration in Alzheimer's disease.

Annals of clinical and translational neurology.
doi:10.1002/acn3.51253

Diagnostic performance and prediction of clinical progression of plasma phospho-tau181 in the Alzheimer's Disease Neuroimaging Initiative.

Molecular psychiatry.
doi:10.1038/s41380-020-00923-z

Head-to-head comparison of clinical performance of CSF phospho-tau T181 and T217 biomarkers for Alzheimer's disease diagnosis.

Alzheimer's & dementia : the journal of the Alzheimer's Association.
2020;doi:10.1002/alz.12236

Blood phosphorylated tau 181 as a biomarker for Alzheimer's disease: a diagnostic performance and prediction modelling study using data from four prospective cohorts.

The Lancet Neurology.
doi:10.1016/s1474-4422(20)30071-5

Plasma p-tau181 accurately predicts Alzheimer's disease pathology at least 8 years prior to post-mortem and improves the clinical characterisation of cognitive decline.

Acta neuropathologica.
doi:10.1007/s00401-020-02195-x

Time course of phosphorylated-tau181 in blood across the Alzheimer's disease spectrum.

Brain : a journal of neurology.
doi:10.1093/brain/awaa399

Plasma phospho-tau181 in presymptomatic and symptomatic familial Alzheimer's disease: a longitudinal cohort study.

Molecular psychiatry.
doi:10.1038/s41380-020-0838-x

Use of plasma biomarkers for AT(N) classification of neurodegenerative dementias.

Journal of neurology, neurosurgery, and psychiatry.
doi:10.1136/jnnp-2021-326603

Effects of pre-analytical procedures on blood biomarkers for Alzheimer's pathophysiology, glial activation, and neurodegeneration.

Alzheimer's & dementia (Amsterdam, Netherlands).
doi:10.1002/dad2.12168

Clinical and analytical comparison of six Simoa assays for plasma P-tau isoforms P-tau181, P-tau217, and P-tau231.

Alzheimers Res Ther.
doi:10.1186/s13195-021-00939-9

Association of Apolipoprotein Eε4 Allele With Clinical and Multimodal Biomarker Changes of Alzheimer Disease in Adults With Down Syndrome.

JAMA Neurol.
doi:10.1001/jamaneurol.2021.1893

Differences Between Plasma and Cerebrospinal Fluid Glial Fibrillary Acidic Protein Levels Across the Alzheimer Disease Continuum.

JAMA Neurol.
doi:10.1001/jamaneurol.2021.3671

Diagnostic and prognostic plasma biomarkers for preclinical Alzheimer's disease.

Alzheimer's & dementia : the journal of the Alzheimer's Association. doi:10.1002/alz.12447

Longitudinal plasma phosphorylated tau 181 tracks disease progression in Alzheimer's disease.

Translational psychiatry.
doi:10.1038/s41398-021-01476-7

Plasma P-tau181 to Aβ42 ratio is associated with brain amyloid burden and hippocampal atrophy in an Asian cohort of Alzheimer's disease patients with concomitant cerebrovascular disease.

Alzheimer's & dementia : the journal of the Alzheimer's Association.
doi:10.1002/alz.12332

Plasma neurofilament light and phosphorylated tau 181 as biomarkers of Alzheimer's disease pathology and clinical disease progression.

Alzheimers Res Ther.
doi:10.1186/s13195-021-00805-8

Plasma p-tau(181) shows stronger network association to Alzheimer's disease dementia than neurofilament light and total tau.

Alzheimer's & dementia : the journal of the Alzheimer's Association.
doi:10.1002/alz.12508

Water exchange rate across the blood-brain barrier is associated with CSF amyloid-β 42 in healthy older adults.

Alzheimer's & dementia : the journal of the Alzheimer's Association.
doi:10.1002/alz.12357

Association of Plasma p-tau181 and p-tau231 Concentrations With Cognitive Decline in Patients With Probable Dementia With Lewy Bodies.

JAMA Neurology.
doi:10.1001/jamaneurol.2021.4222

Associations of Fully Automated CSF and Novel Plasma Biomarkers With Alzheimer Disease Neuropathology at Autopsy.

Neurology.
doi:10.1212/wnl.0000000000012513

Characterization of Alzheimer's tau biomarker discordance using plasma, CSF, and PET.

Alzheimers Res Ther.
doi:10.1186/s13195-021-00834-3

Large-scale plasma proteomic profiling identifies a high-performance biomarker panel for Alzheimer's disease screening and staging.

Alzheimer's & dementia : the journal of the Alzheimer's Association.
doi:10.1002/alz.12369

Population-based blood screening for preclinical Alzheimer's disease in a British birth cohort at age 70.

Brain : a journal of neurology.
doi:10.1093/brain/awaa403

Biomarker-Based Prediction of Longitudinal Tau Positron Emission Tomography in Alzheimer Disease.

JAMA Neurol.
doi:10.1001/jamaneurol.2021.4654

Blood-brain barrier breakdown in relationship to Alzheimer and vascular disease.

Ann Neurol.
doi:10.1002/ana.26134

Phosphorylated tau181 in plasma as a potential biomarker for Alzheimer's disease in adults with Down syndrome.

Nature communications.
doi:10.1038/s41467-021-24319-x

A genome-wide association study of plasma phosphorylated tau181.

Neurobiology of aging.
doi:10.1016/j.neurobiolaging.2021.04.018

Plasma levels of phosphorylated tau 181 are associated with cerebral metabolic dysfunction in cognitively impaired and amyloid-positive individuals.

Brain Communications.
doi:10.1093/braincomms/fcab073

Comparison of Plasma Phosphorylated Tau Species With Amyloid and Tau Positron Emission Tomography, Neurodegeneration, Vascular Pathology, and Cognitive Outcomes.

JAMA Neurology.
doi:10.1001/jamaneurol.2021.2293

Longitudinal Associations of Blood Phosphorylated Tau181 and Neurofilament Light Chain With Neurodegeneration in Alzheimer Disease.

JAMA Neurol.
doi:10.1001/jamaneurol.2020.4986

Tau PET correlates with different Alzheimer's disease-related features compared to CSF and plasma p-tau biomarkers.

EMBO molecular medicine.
doi:10.15252/emmm.202114398

Cohort Analysis of the Association of Delirium Severity with Cerebrospinal Fluid Amyloid-Tau-Neurodegeneration Pathologies.

J Gerontol A Biol Sci Med Sci.
doi:10.1093/gerona/club203

Novel genetic variants in MAPT and alterations in tau phosphorylation in amyotrophic lateral sclerosis post-mortem motor cortex and cerebrospinal fluid.

Brain Pathol.
doi:10.1111/bpa.13035

Associations of longitudinal plasma p-tau181 and NFL with tau-PET, A β -PET and cognition.

Journal of neurology, neurosurgery, and psychiatry.
doi:10.1136/jnnp-2020-325537

Plasma phosphorylated-tau181 as a predictive biomarker for Alzheimer's amyloid, tau and FDG PET status.

Translational psychiatry.
doi:10.1038/s41398-021-01709-9

Reducing acetylated tau is neuroprotective in brain injury.

Cell.
doi:10.1016/j.cell.2021.03.032

Heterogeneity in α -synuclein fibril activity correlates to disease phenotypes in Lewy body dementia.

Acta neuropathologica.
doi:10.1007/s00401-021-02288-1

Plasma neurofilament L to amyloid β 42 ratio in differentiating Alzheimer's type from non-Alzheimer's dementia: A cross-sectional pilot study from India.

Asian Journal of Psychiatry.
doi:https://doi.org/10.1016/j.ajp.2021.102914

The Japan-Multimodal Intervention Trial for Prevention of Dementia (J-MINT): The Study Protocol for an 18-Month, Multicenter, Randomized, Controlled Trial.

The Journal of Prevention of Alzheimer's Disease.
doi:10.14283/jpad.2021.29

Association of plasma P-tau181 with memory decline in non-demented adults.

Brain Commun.
doi:10.1093/braincomms/fcab136

Plasma pTau181 predicts cortical brain atrophy in aging and Alzheimer's disease.

Alzheimers Res Ther.
doi:10.1186/s13195-021-00802-x

Detection of β -amyloid positivity in Alzheimer's Disease Neuroimaging Initiative participants with demographics, cognition, MRI and plasma biomarkers.

Brain Communications.
doi:10.1093/braincomms/fcab008

Development of a Plasma Biomarker Diagnostic Model Incorporating Ultrasensitive Digital Immunoassay as a Screening Strategy for Alzheimer Disease in a Chinese Population.

Clin Chem.
doi:10.1093/clinchem/hvab192

Plasma biomarker profiles and the correlation with cognitive function across the clinical spectrum of Alzheimer's disease.

Alzheimers Res Ther.
doi:10.1186/s13195-021-00864-x

Association between polygenic risk score of Alzheimer's disease and plasma phosphorylated tau in individuals from the Alzheimer's Disease Neuroimaging Initiative.

Alzheimers.
doi:10.1186/s13195-020-00754-8

Cerebrospinal fluid p-tau231 as an early indicator of emerging pathology in Alzheimer's disease.

EBioMedicine.
doi:10.1016/j.ebiom.2022.103836

The accuracy and robustness of plasma biomarker models for amyloid PET positivity.

Alzheimer's Research & Therapy.
doi:10.1186/s13195-021-00942-0

Two Randomized Phase 3 Studies of Aducanumab in Early Alzheimer's Disease.

The Journal of Prevention of Alzheimer's Disease.
doi:10.14283/jpad.2022.30

Differential levels of plasma biomarkers of neurodegeneration in Lewy body dementia, Alzheimer's disease, frontotemporal dementia and progressive supranuclear palsy.

Journal of neurology, neurosurgery, and psychiatry.
doi:10.1136/jnnp-2021-327788

Blood amyloid and tau biomarkers as predictors of cerebrospinal fluid profiles.

J Neural Transm (Vienna).
doi:10.1007/s00702-022-02474-9

Crosswalk study on blood collection-tube types for Alzheimer's disease biomarkers.

Alzheimer's & dementia (Amsterdam, Netherlands).
doi:10.1002/dad2.12266

Comparing the effect of xenon and sevoflurane anesthesia on postoperative neural injury biomarkers: a randomized controlled trial.

Med Gas Res.
doi:10.4103/2045-9912.324591

Plasma p-tau231, p-tau181, PET biomarkers and cognitive change in older adults.

Ann Neurol.
doi:10.1002/ana.26308

CSF biomarkers and plasma p-tau181 as predictors of longitudinal tau accumulation: Implications for clinical trial design.

Alzheimer's & dementia: the journal of the Alzheimer's Association.
doi:10.1002/alz.12570

Plasma phosphorylated-tau181 levels reflect white matter microstructural changes across Alzheimer's disease progression.

Metabolic Brain Disease.
doi:10.1007/s11011-022-00908-7

Plasma α -synuclein and phosphorylated tau 181 as a diagnostic biomarker panel for de novo Parkinson's Disease.

Journal of neurochemistry.
doi:10.1111/jnc.15601

Plasma biomarkers for Alzheimer's Disease in relation to neuropathology and cognitive change.

Acta neuropathologica.
doi:10.1007/s00401-022-02408-5

ASIC-E4: Interplay of Beta-Amyloid, Synaptic Density and Neuroinflammation in Cognitively Normal Volunteers With Three Levels of Genetic Risk for Late-Onset Alzheimer's Disease - Study Protocol and Baseline Characteristics.

Frontiers in neurology.
doi:10.3389/fneur.2022.826423

N-terminal and mid-region tau fragments as fluid biomarkers in neurological diseases.

Brain : a journal of neurology.
doi:10.1093/brain/awab481

Association of plasma biomarkers, p-tau181, glial fibrillary acidic protein, and neurofilament light, with intermediate and long-term clinical Alzheimer's disease risk: Results from a prospective cohort followed over 17 years.

Alzheimer's & dementia: the journal of the Alzheimer's Association.
doi:10.1002/alz.12614

A Longitudinal Study of Plasma pTau181 in Mild Cognitive Impairment with Lewy Bodies and Alzheimer's Disease.

Movement disorders: official journal of the Movement Disorder Society.
doi:10.1002/mds.28994

Tissot C, Theriault J, Kunach P, et al. Comparing tau status determined via plasma pTau181, pTau231 and [18F]MK6240 tau-PET.

eBioMedicine. 2
doi:https://doi.org/10.1016/j.ebiom.2022.103837

Examining the association between blood-based biomarkers and human post mortem neuropathology in the University of Kentucky Alzheimer's Disease Research Center autopsy cohort.

Alzheimer's & Dementia.
doi:https://doi.org/10.1002/alz.12639