TESORAI TROVE

Five public cohorts. One new biomarker question. A completed study in 25 days.

Trove helped connect a newly published Alzheimer's plasma-protein signature to independent brain proteomics evidence—without starting a new experimental cohort.

From publication to preprint

AUG 10 — New Alzheimer's plasma-protein signature published

TROVE — **5 relevant brain proteomics cohorts identified**
204 post-mortem samples

SEARCH — **Raw spectra re-mined for p-tau217**
Recovered in 4 of 5 cohorts

SEP 4 — **New cross-cohort preprint posted**

What Trove made possible

Find the right cohorts

Identify studies containing Braak-stage annotations, sufficient cohort size, discovery proteomics, and relevant panel coverage.

Start with structured data

Work from harmonized protein matrices and aligned sample metadata instead of manually reconstructing each public deposit.

Compare evidence across studies

Evaluate the same biological question across heterogeneous brain regions, acquisition methods, and patient populations.

Explore 1,300+ structured public proteomics datasets in Trove.

Public data became the starting point, not the bottleneck.

What the public data revealed

The plasma-derived panel retained disease-stage information across five independent brain proteomics cohorts, despite differences in experimental design, brain region, measurement technology, and panel coverage.

PXD005321	PXD007160	PXD020296	PXD057298	PXD029380
0.90	1.00	1.00	0.82	0.78

AUC 0.78–1.00 across five independently modeled cohorts

Each cohort modeled independently using nested leave-one-donor-out cross-validation.

Go beyond deposited protein tables

4/5

p-tau217 detected after raw-data reanalysis

None of the published protein summaries explicitly quantified p-tau217. Reanalysis of the underlying raw spectra with Tesorai Search recovered the disease-relevant phosphopeptide in four of five cohorts.

- Quantifiable p-tau217 was associated with later Braak stage where detected.
- The AD-associated p-tau231 phosphopeptide was identified in all five cohorts.
- Relevant peptide evidence can remain hidden when public studies are reused only through deposited protein-level summaries.

Connected workflow

Trove
Identifies and structures relevant public cohorts.

Chat
Supports consistent analysis and cross-cohort comparison.

Search
Returns to raw spectra when deeper proteoform evidence is needed.

> *The results support tissue-level biological concordance for a recently proposed plasma staging panel. They do not constitute prospective clinical validation, and the panel was not uniquely predictive relative to the broader brain proteome in every cohort.*

STUDY CONTEXT

This preprint analysis used heterogeneous public cohorts with variable protein coverage. Failure to detect p-tau217 should not be interpreted as biological absence.

Kim CC, Kerrisk Campbell M, Burq M, et al. Rapid Mechanistic Bridging of an Alzheimer's Disease Plasma Protein Staging Panel Across Brain Proteomics Cohorts. bioRxiv, posted September 4, 2026. Not peer reviewed. doi:10.64898/2026.08.31.748393.

The next study may already be in the public data.

Use Trove to find relevant public proteomics cohorts, explore analysis-ready data, and connect new findings to existing evidence.

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Explore public proteomics