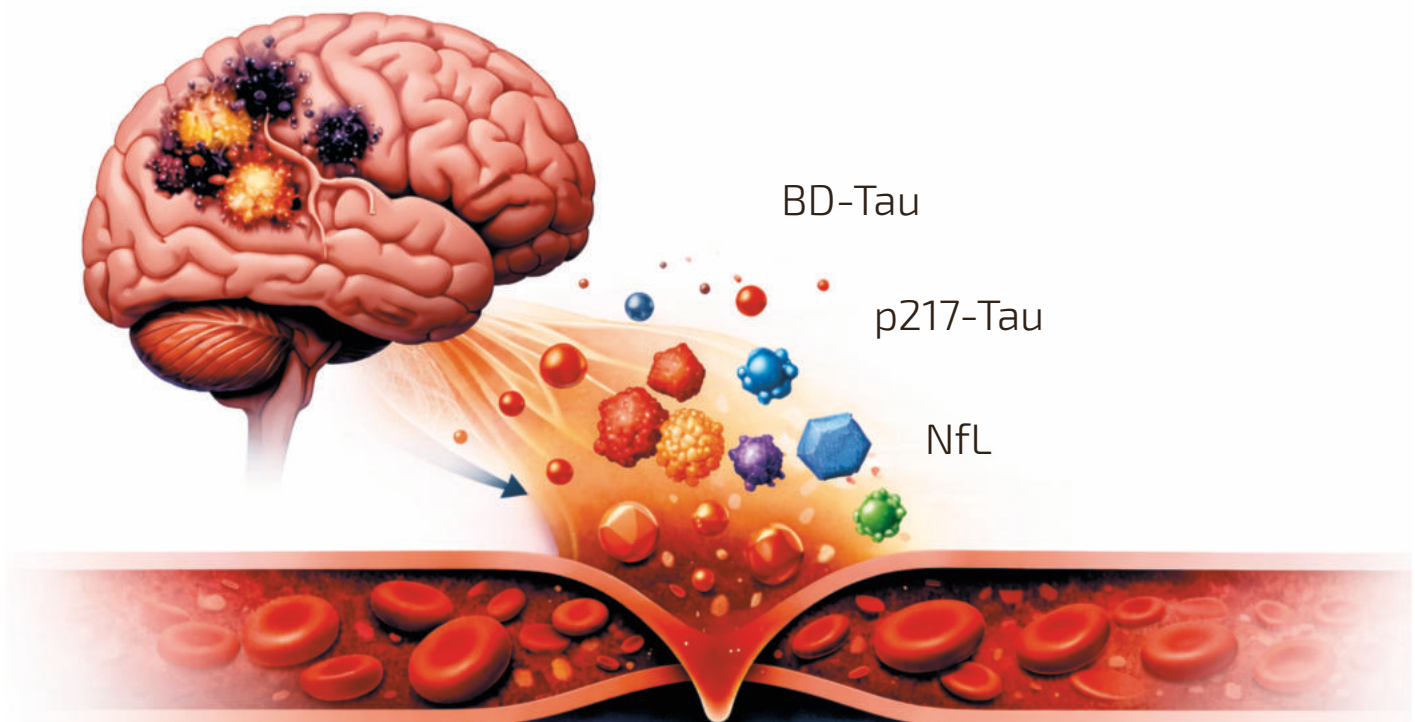


# From brain pathology to blood-based biomarkers

## *Tools for reliable detection of blood-based biomarkers (BBMs)*

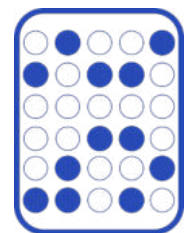
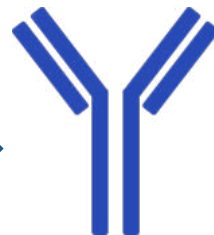
Neurodegenerative diseases begin decades before clinical symptoms appear. Advances in blood-based biomarker research now enable the identification of disease-associated protein changes years before clinical symptoms appear. Reliable measurement of brain-derived biomarkers in blood is therefore becoming essential for early diagnosis, patient stratification, and next-generation therapeutic trials.



**BBMs**



**Enrichment**



**Analysis**

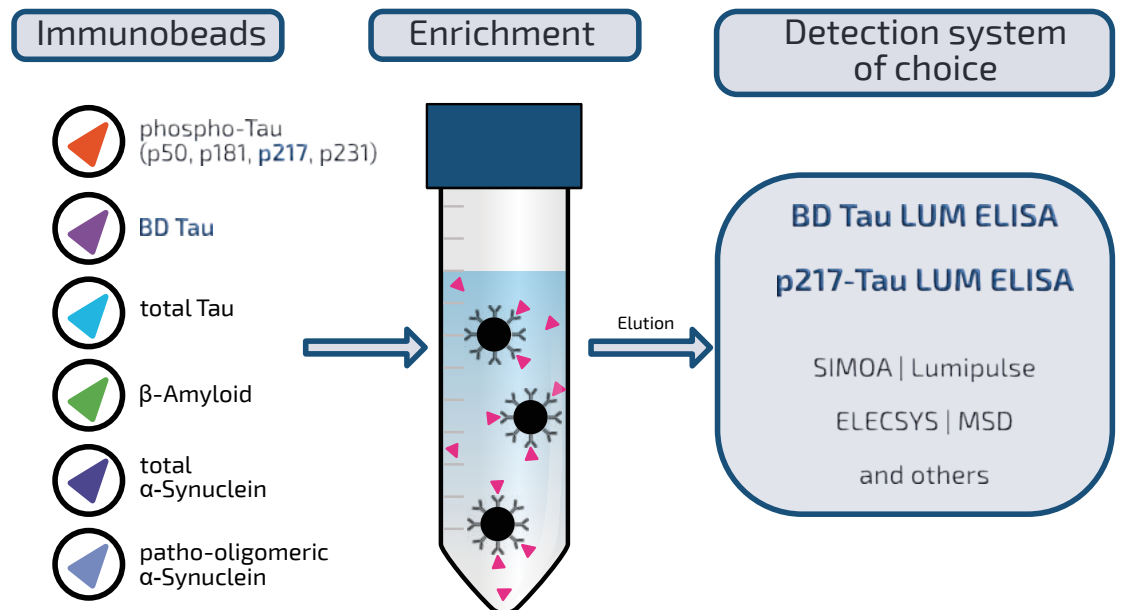
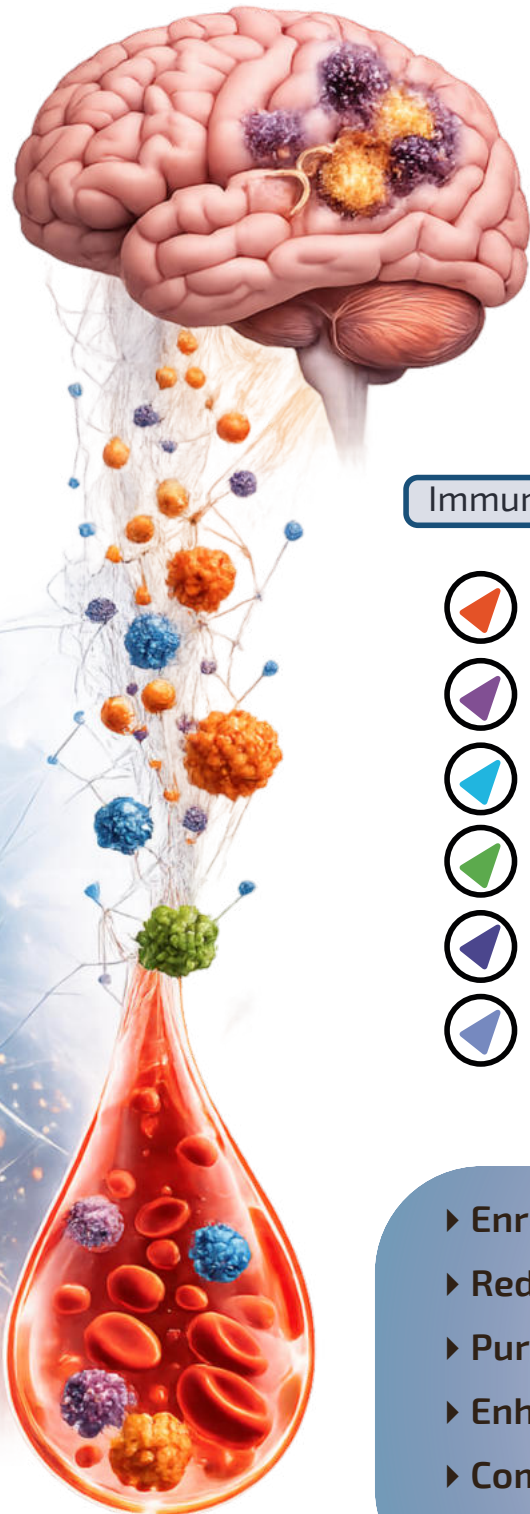
Our technologies support this new diagnostic era by enabling the enrichment and ultra-sensitive detection of brain-derived biomarkers in blood, providing powerful tools for biomarker discovery, assay development, and translational research in neurodegenerative diseases.

# Overcoming the blood matrix challenge

## Enrichment of low-abundance neurodegeneration biomarkers

The detection of brain-derived proteins in blood is technically challenging due to the complex plasma matrix and the extremely low abundance of disease-associated biomarkers. Efficient purification and enrichment are critical steps for sensitive and reliable biomarker measurement.

Our immunoprecipitation-based technology (IP-IA methodology) selectively enriches neurodegeneration biomarkers from blood-based samples. Captured biomarkers are released from the immunobeads in a purified and concentrated form, providing optimal input for downstream analysis. By reducing matrix effects and increasing biomarker concentration, this approach can improve the performance of virtually any downstream test system, including ultrasensitive immunoassays and other analytical platforms.



- ▶ Enrichment of low-abundance brain-derived biomarkers
- ▶ Reduction of plasma matrix effects
- ▶ Purified and concentrated biomarker release
- ▶ Enhanced performance of downstream assays
- ▶ Compatible with multiple downstream detection technologies
- ▶ soon available on TECAN-Fluent

# The biomarker landscape of Neurodegeneration

## Key protein biomarkers reflecting pathological processes in ND

Neurodegenerative diseases are characterized by disease-specific protein modifications, pathological aggregation, and neuroaxonal damage. Blood-based biomarkers reflecting these pathological processes are increasingly used for biological staging, early detection, and monitoring disease progression and therapeutic response.

### Tau pathology (T)

p217-Tau

BD-Tau

MTBR-Tau

p181-Tau

p231-Tau

### Neuronal injury (N)

NfL

### Amyloid pathology (A)

Amyloid- $\beta$  42

### Synuclein pathology

$\alpha$ -Synuclein

patho-oligomeric  $\alpha$ -Syn

### Other proteinopathies

TDP43

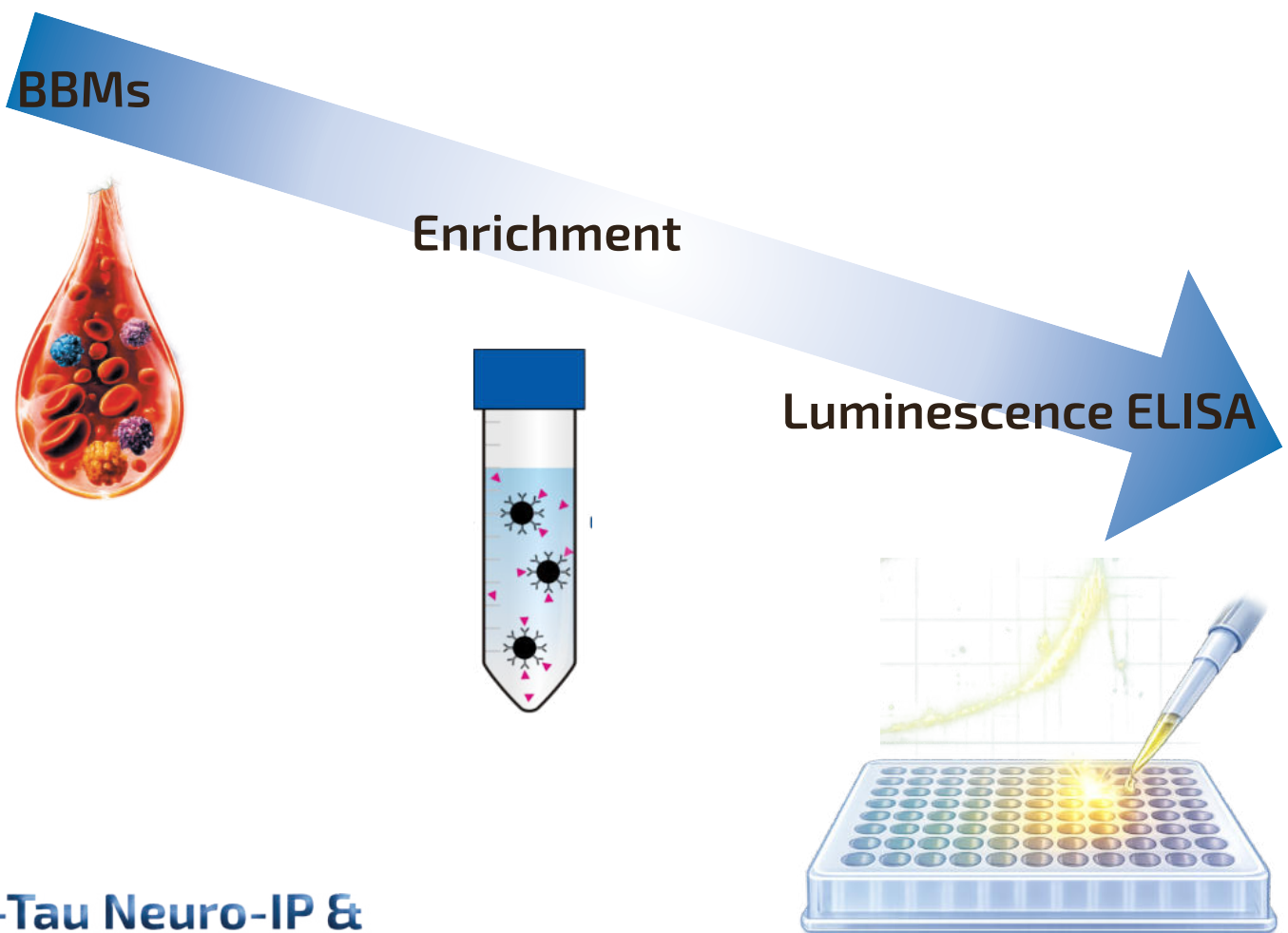
PrP

Reliable detection of these biomarkers requires sensitive analytical tools capable of measuring low-abundance proteins in blood.

# From biomarker enrichment to ultra-sensitive detection

*Integrated workflows for reliable measurement of blood-based biomarkers*

Reliable detection of blood-based biomarkers requires efficient enrichment of low-abundance proteins and highly sensitive analytical assays. Integrating these technologies enables accurate measurement of brain-derived biomarkers in blood and supports research and diagnostic development in neurodegenerative diseases.



**BD-Tau Neuro-IP &**

**BD-Tau LUM ELISA / p217-Tau LUM ELISA**

**for sensitive biomarker detection**

**An integrated solution - from IP to Illumination.**

**Enabling the sensitive and specific quantification of BD-Tau and BD-p217-Tau in plasma & serum samples by use of standard laboratory equipment.**