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Sysmex Corporation

Sysmex Presents Academic Report in Effort to Create a Simple Blood Test to Diagnose Alzheimer's Disease

The Content Presented at the International Conference on Alzheimer's & Parkinson's Diseases: (AD/PD™ 2022)

Sysmex Corporation (HQ: Kobe, Japan; Chairman and CEO: Hisashi Ietsugu; hereafter, "Sysmex") are aiming to leverage their individual technologies and knowhow in the creation of next generation diagnostic agents that enable early diagnosis of dementia as well as treatment selection and regular confirmation of treatment efficacy.

Sysmex Corporation announced today that a poster presentation on the basic evaluation of plasma $A\beta_{1-40}$ and $A\beta_{1-42}$ using an HISCL fully automated immunoassay system had been given at the International Conference on Alzheimer's & Parkinson's Diseases (AD/PD™ 2022) held from March 15 to 20 2022 in Barcelona, Spain.

Presentation title	The Evaluation of Plasma $A\beta_{1-40}$ and $A\beta_{1-42}$ Immunoassays on the Fully Automated Immunoassay Platform (HISCL™ series)
Authors	Shunsuke Watanabe[1], Kazuto Yamashita[1], Kengo Ishiki[1], Masahiro Miura[1], Yasuhiro Irino[1], Toshiko Kubo[2], Jun Matsui[3], Kei Hagino[3], Shigeki Iwanaga[1], Toshiyuki Sato [1], Tomokazu Yoshida[4] [1]Central Research Laboratories, Sysmex Corporation, Kobe, Japan; [2]Sysmex R&D Center Americas, Inc., Mundelein, Illinois, USA; [3]Business Incubation, Sysmex Corporation, Kobe, Japan; [4] Sysmex Corporation, Kobe, Japan
Type of presentation	Poster
Overview of presentation	Accumulation of β-amyloid peptide (Aβ) (amyloid pathology) in the brain is a hallmark pathology in the diagnosis of Alzheimer's disease (AD). In recent years, progress has been made in the development of various diagnostic tests and demand for simple tests such as those based on blood biomarkers is expected to increase in the future. In the present study, we evaluated the analytical performance of plasma $A\beta_{1-40}$ and $A\beta_{1-42}$ assays using an HISCL automated immunoassay system (Sysmex). (Results) ✓ The quantification limits were 2.46 pg/mL for $A\beta_{1-40}$ and 0.16 pg/mL for $A\beta_{1-42}$. ✓ The repeatability (within-run) coefficients of variation (CVs) were less than 3.7% ($A\beta_{1-40}$) and 2.0% ($A\beta_{1-42}$).

	✓ The intermediate precision (within-laboratory) CVs were less than 4.6% ($A\beta_{1-40}$) and 5.3% ($A\beta_{1-42}$). ✓ The cross-reactivity with various lengths of Aβ peptide was less than 0.5%. ✓ The interference from blood components was less than 10% for both assays. ✓ For commercially available plasma samples from 20 patients, there were significant correlations between our assays and immunoprecipitation mass spectrometry (IP-MS) assays with correlation coefficients of Pearson's r = 0.91 ($A\beta_{1-40}$) and 0.82 ($A\beta_{1-42}$). The assays for $A\beta_{1-40}$ and $A\beta_{1-42}$ evaluated in the present study were robust and there were no cross reactions with blood components or other Aβ peptides. With high sensitivity and specificity, analytical performance was high. The measurement of $A\beta_{1-40}$ and $A\beta_{1-42}$ in blood using an HISCL fully automated immunoassay system is low in invasiveness and could be useful in routine screening in the clinical setting.

References

(1) K. Yamashita *et. al.* Biochemical and Biophysical Research Communications, **576**, 2021, 22-26
(2) T. Iino *et. al.*The Journal of Applied Laboratory Medicine, **6**, 2021, 834–845,