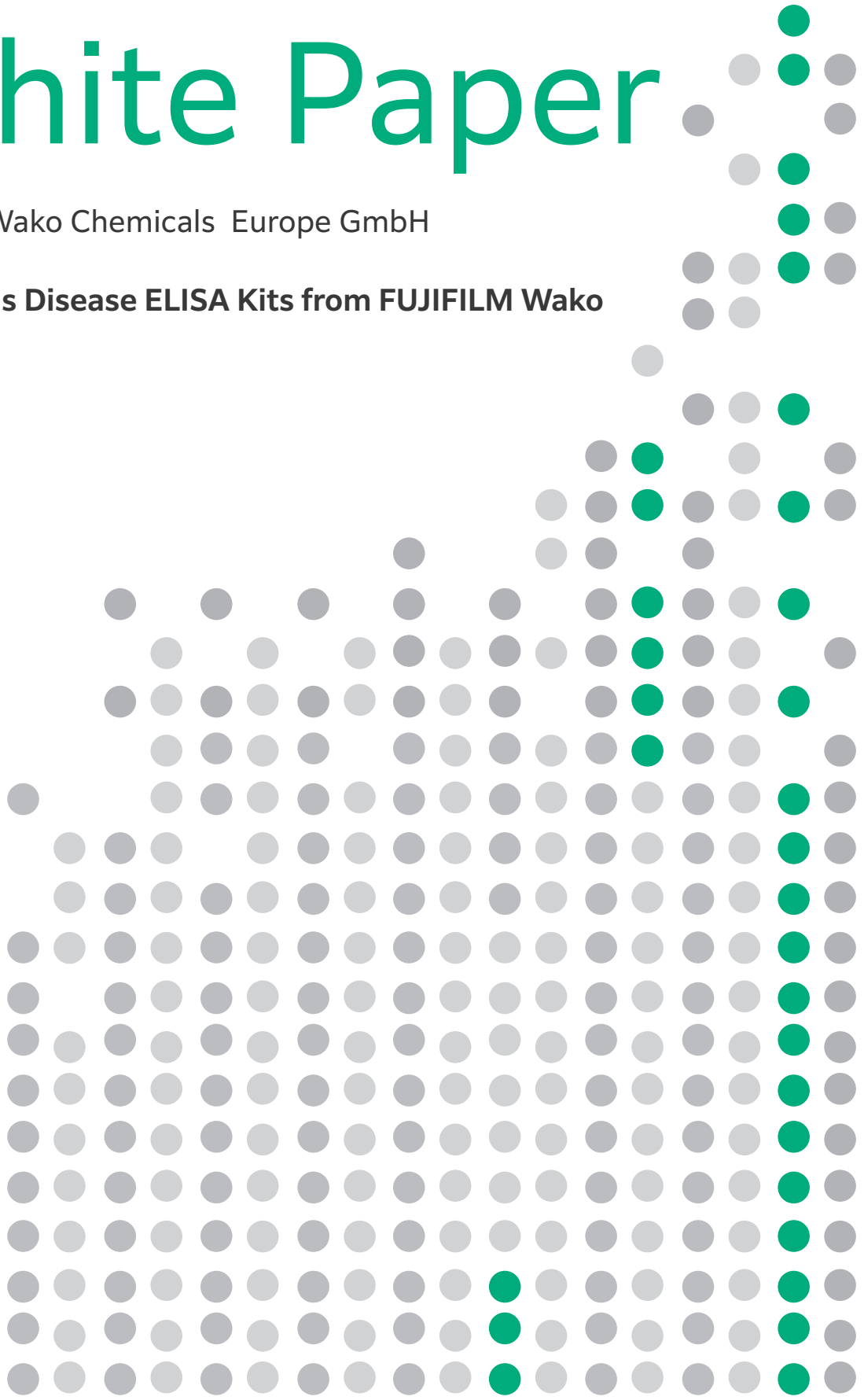


White Paper

FUJIFILM Wako Chemicals Europe GmbH

Alzheimer's Disease ELISA Kits from FUJIFILM Wako



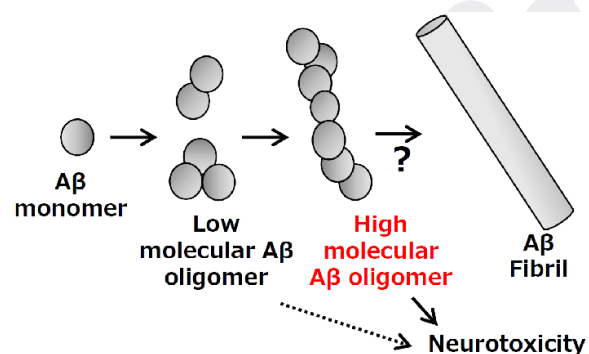
Alzheimer's Disease ELISA Kits from FUJIFILM Wako

Introduction

Recently, amyloid β ($A\beta$) oligomer is focused as a cause of Alzheimer's disease. $A\beta$ oligomer is a soluble aggregate by polymerized of $A\beta$ monomers, and it impairs synaptic function of neurons. $A\beta$ oligomer has several types, low molecular $A\beta$ oligomers (Low-n oligomer) and high molecular $A\beta$ oligomers (ADDL, $A\beta^{*56}$ and proto-fibril).

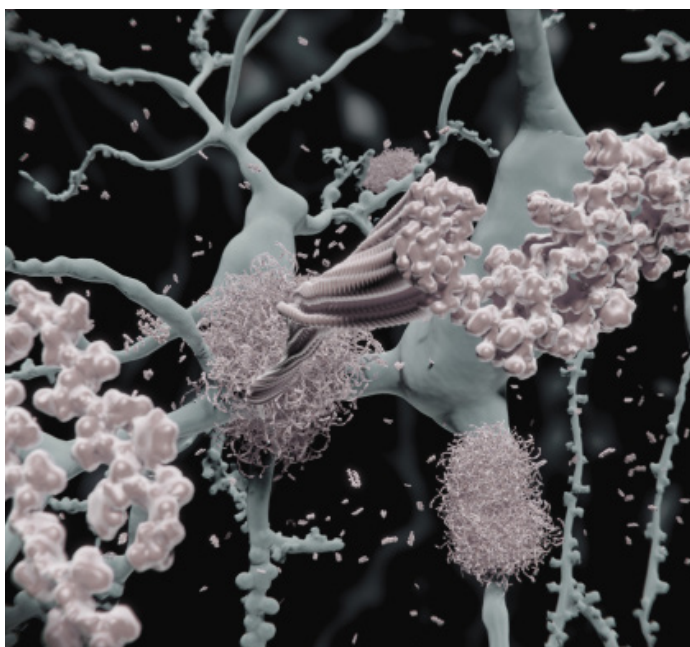
It has reported that $A\beta^{*56}$ (12-mer) oligomer greatly affects memory damage¹⁾, and in cognitively normal adults $A\beta^{*56}$ increased ahead of amyloid- β dimers or amyloid- β trimers, and pathological tau proteins and postsynaptic proteins correlated with $A\beta^{*56}$, but not amyloid- β dimers or amyloid- β trimers²⁾.

This item is an ELISA kit that can specifically measure high molecular $A\beta$ oligomers.



1) Lesné, S., et al.: *Nature*, **440**, 7082, 352(2006).

2) Lesné, S. E., et al.: *Brain*, **136**, 1383(2013).



Features

- Detects in serum and plasma, CSF sample
- Specifically reactive with ≥ 9 mer $A\beta$ oligomer

Components

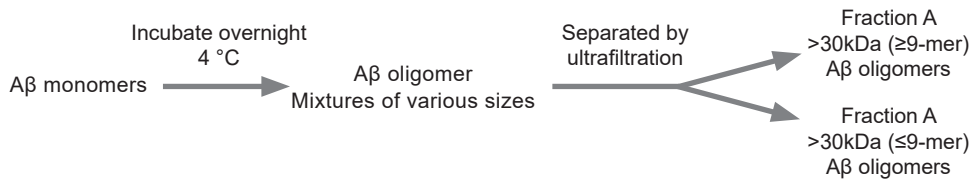
(1) Antibody (BAN50)-coated	1Plate
(2) Standard Solution (10 nM)	100 μ l
(3) Buffer	60 ml
(4) Biotin-conjugated Antibody(BAN50) Solution	100 μ l
(5) Peroxidase-conjugated Streptavidin Solution	100 μ l
(6) Luminescent Reagent 1	6 ml
(7) Luminescent Reagent 2	6 ml
(8) Wash Solution (10 x)	100 ml
(9) Sample Buffer for Serum/Plasma	50 ml
(10) Plate Seal	4 sheets

Ordering Information

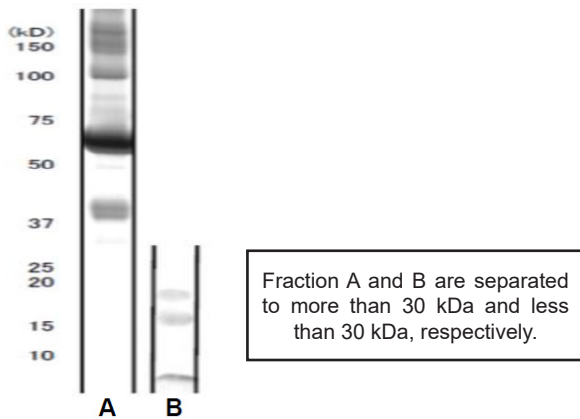
Wako Code	Product name	Storage Condition	Grade	Package size
290-82001	High Molecular Amyloid β Oligomer ELISA Kit Wako Ver.2	Keep at 2-10 $^{\circ}$ C	For Immunochemistry	96 tests

Specificity for Aβ oligomers in the ELISA

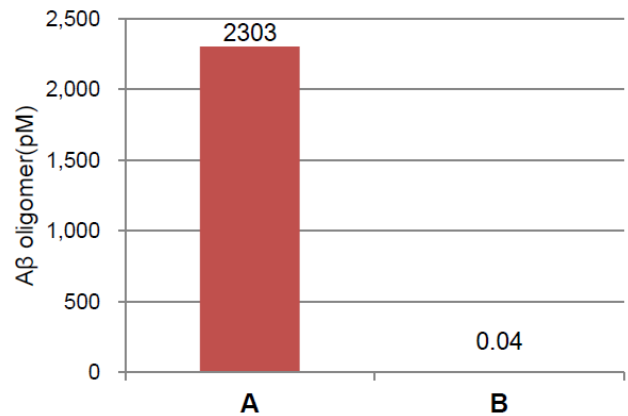
Aβ monomers were incubated the solution at 4 °C overnight in order to synthesize various size of Aβ oligomers. They were separated Fraction A and Fraction B by ultrafiltration. The fractions were analyzed by western blotting and the Aβ oligomer ELISA.



Western blotting using Aβ antibody(BAN50)



Aβ oligomer ELISA



A strong signal was exhibited in the fraction A containing 9-mer and more (≥30 kDa), whereas few signal was detected in fraction B containing 8-mer and smaller (≤30 kDa).

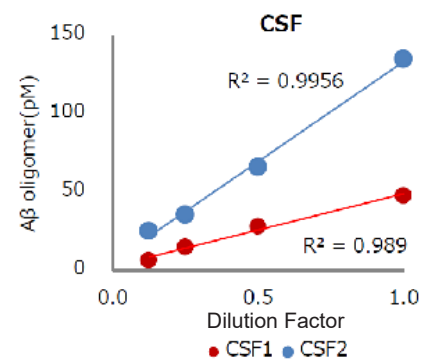
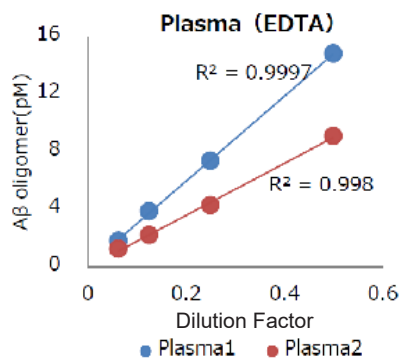
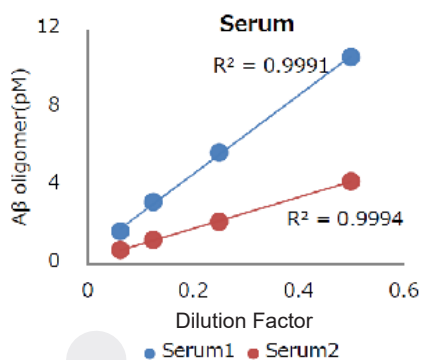
Example of measurement 1 - spiked recovery test and dilution linearity

Human plasma	Not spiked	+0.5 pM Std.		+0.1 pM Std.		+5 pM Std.		+30 pM Std.	
	Assay value	Assay value	Recovery	Assay value	Recovery	Assay value	Recovery	Assay value	Recovery
	1.85 pM	2.36 pM	102 %	2.85 pM	100 %	7.11 pM	105 %	31.2 pM	97,8 %

Human serum	Not spiked	+0.5 pM Std.		+0.1 pM Std.		+5 pM Std.		+30 pM Std.	
	Assay value	Assay value	Recovery	Assay value	Recovery	Assay value	Recovery	Assay value	Recovery
	1.58 pM	2.07 pM	98 %	2.59 pM	101 %	6.64 pM	101 %	31.9 pM	101 %

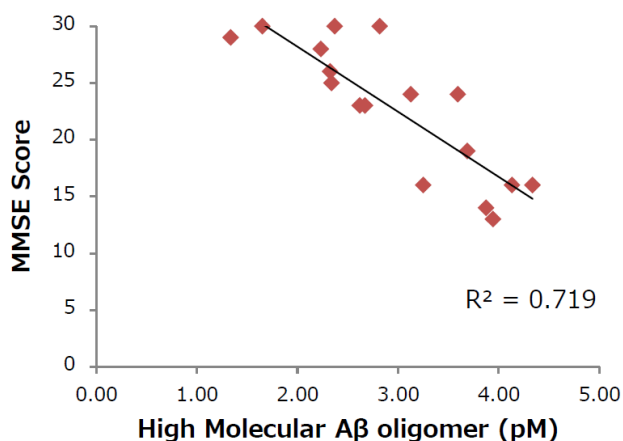
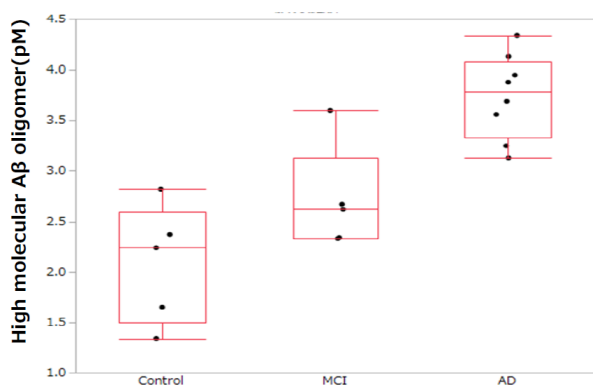
Human CSF 1	Not spiked	+3 pM Std.		+6 pM Std.		+15 pM Std.	
	Assay value	Assay value	Recovery	Assay value	Recovery	Assay value	Recovery
	5.16 pM	8.01 pM	95 %	10.6 pM	91 %	18.1 pM	86 %

Human CSF 2	Not spiked	+0.5 pM Std.		+0.1 pM Std.		+5 pM Std.	
	Assay value	Assay value	Recovery	Assay value	Recovery	Assay value	Recovery
	29.1 pM	38.8 pM	97 %	44.0 pM	99.3 %	59.9 pM	88 %



Principle

Cerebrospinal fluids(CSF) of patients with Alzheimer disease (AD) and Mild Cognitive Impairment (MCI), non-dementia patients(control), were measured with our ELISA kit and competitor's kit.

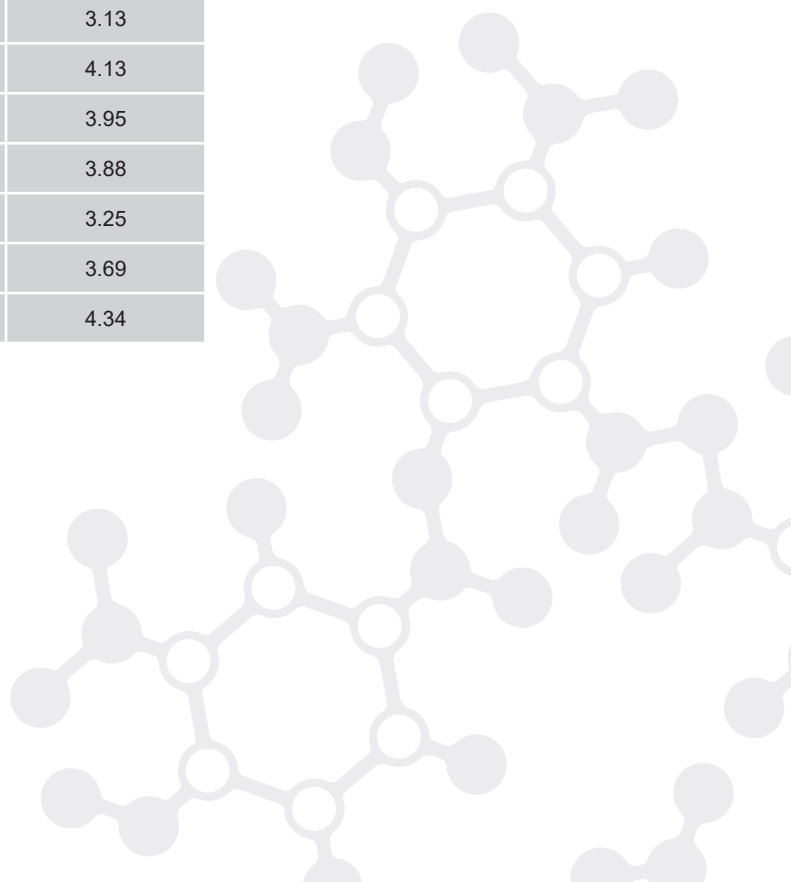


	Age	Sex	MMSE +3	CSF Aβ oligomer(pM)
Control n = 5	69	M	30	2.37
	60	F	30	1.65
	59	M	30	2.82
	46	M	28	2.24
	60	F	29	1.34
MCI n = 5	69	F	24	3.6
	76	M	23	2.62
	82	M	26	2.33
	69	F	23	2.67
	73	F	25	2.34
AD n = 8	79	F	10	3.56
	88	M	24	3.13
	62	M	16	4.13
	78	M	13	3.95
	63	M	14	3.88
	74	F	16	3.25
	76	M	19	3.69
	84	M	16	4.34

****MMSE score: diagnosis Inquiry test score of cognitive function
 30-28 Normal
 27-24 Suspected of mild cognitive impairment
 ≤ 23 Suspected of dementia

There was a significant difference between Control, MCI and AD.

High molecular Aβ oligomer correlated with MMSE score.



Related Products

A β ELISA kit

Wako Code	Product name	Storage Condition	Grade	Package size
292-62301	Human β Amyloid(1-40) ELISA Kit Wako	Keep at 2-10 °C	For Immunochemistry	96 tests
298-64601	Human β Amyloid(1-40)ELISA Kit Wako II	Keep at 2-10 °C	For Immunochemistry	96 tests
294-62501	Human/Rat β Amyloid(40)ELISA Kit Wako	Keep at 2-10 °C	For Immunochemistry	96 tests
294-64701	Human/Rat β Amyloid(40)ELISA Kit Wako II	Keep at 2-10 °C	For Immunochemistry	96 tests
298-62401	Human β Amyloid(1-42) ELISA Kit Wako	Keep at 2-10 °C	For Immunochemistry	96 tests
296-64401	Human β Amyloid(1-42) ELISA Kit Wako, High Sensitive	Keep at 2-10 °C	For Immunochemistry	96 tests
290-62601	Human/Rat β Amyloid(42)ELISA Kit Wako	Keep at 2-10 °C	For Immunochemistry	96 tests
292-64501	Human/Rat β Amyloid(42) ELISA Kit Wako, High Sensitive	Keep at 2-10 °C	For Immunochemistry	96 tests

TAU ELISA kit

Wako Code	Product name	Storage Condition	Grade	Package size
296-80401	Tau ELISA Kit Wako	Keep at 2-10 °C	For Immunochemistry	96 tests
298-81701	Phosphorylated Tau T181 ELISA Kit Wako	Keep at 2-10 °C	For Immunochemistry	96 tests

A β and APP antibodies

Wako Code	Product name	Storage Condition	Grade	Package size
017-26871	Anti Human Amyloid β , Monoclonal Antibody (BAN50)	Keep at -20 °C	For Immunochemistry	10 μ l
013-26873				50 μ L
018-26921	Anti Amyloid β 40, Monoclonal Antibody (BA27)	Keep at -20 °C	For Immunochemistry	10 μ l
014-26923				50 μ L
014-26901	Anti Amyloid β 42(43), Monoclonal Antibody (BC05)	Keep at -20 °C	For Immunochemistry	10 μ l
010-26903				50 μ L
014-26881	Anti Amyloid β , Monoclonal Antibody (BNT77)	Keep at -20 °C	For Immunochemistry	10 μ l
010-26883				50 μ L
012-27781	Anti Amyloid β , Monoclonal Antibody (2C8)	Keep at -20 °C	For Immunochemistry	50 μ L
014-27241	Anti Amyloid Precursor Protein, Monoclonal Antibody(3E9)	Keep at -20 °C	For Immunochemistry	10 μ l
010-27243				50 μ L

Listed products are intended for laboratory research use only, and not to be used for drug, food or human use. / Please visit our online catalog to search for other products from FUJIFILM Wako; <https://labchem-wako.fujifilm.com> / This leaflet may contain products that can not be exported to your country due to regulations. / Bulk quote requests are welcome. Please contact us.

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