

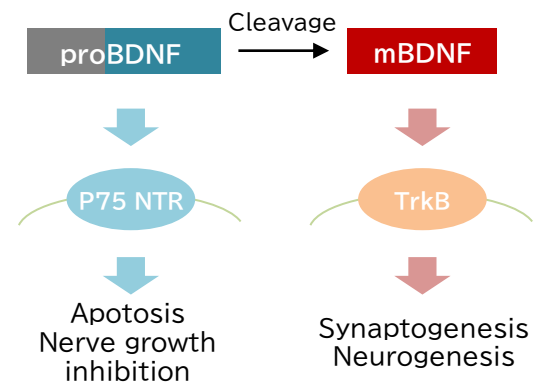
Specific and sensitive measurement of mature BDNF

Mature BDNF ELISA Kit

Brain-derived neurotrophic factor (BDNF), which belongs to the nerve growth factor (NGF) family, is involved in neurogenesis, neuroprotection, synaptogenesis, etc. and is considered as a candidate marker for psychiatric diseases, including depression.

proBDNF, the precursor of BDNF, is processed to yield mature BDNF (mBDNF). Since proBDNF and mBDNF show completely different effects, there is a need for a method that can accurately measure mBDNF.

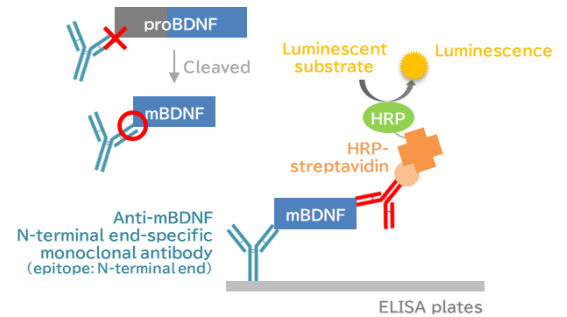
We succeeded in the development of ELISA kits that can specifically detect mature BDNF using an antibody recognizing the N-terminal side of mature BDNF.



Features

- Specifically detect mature BDNF using an antibody recognizing the N-terminal side of mature BDNF.
- Mature BDNF ELISA Kit *Wako*, High-Sensitive can be used for detection mBDNF in human saliva and rodent serum or plasma.

Products	FUJIFILM Wako	Company A	Company B	Company C
Reactivity with human proBDNF	<0.5% (Luminescence) Approx.10% (Chromogenic)	Approx.10%	Approx.15%	Approx.50%
Sensitivity (lower limit of calibration curve)	0.2 pg/mL (Luminescence) 4.1 pg/mL (Chromogenic)	62.5 pg/mL	15.6 pg/mL	15.0 pg/mL



Product List

Product Name	Mature BDNF ELISA Kit <i>Wako</i> , High Sensitive	Mature BDNF ELISA Kit <i>Wako</i>
Product No.	298-83901	296-83201
Calibration curve range	0.205 - 50 pg/mL	4.1 - 1,000 pg/mL
Analyte	mBDNF	mBDNF
Reactivity with human proBDNF	<0.5%	Approximately 10%
Analysis sample	Mouse serum/plasma/brain lysate Rat serum/plasma Human serum/plasma/saliva	Human serum/plasma
Sample volume	13 μ L (4-fold dilution)	Serum: 10 μ L (10-fold dilution) Plasma: 5 μ L (20-fold dilution)
Measurement duration	Approximately 4 hours	Approximately 4 hours
Detection method	Luminescence (A plate reader for luminescence measurement is required)	Chromogenic

■ Mature BDNF ELISA Kit *Wako*, High Sensitive

Mature BDNF ELISA Kit *Wako*, High-Sensitive is a sandwich ELISA that combines anti-mBDNF N-terminal end-specific monoclonal antibody and anti-mBDNF polyclonal antibody. The cross-reactivity with proBDNF is substantially reduced by using end-specific antibodies (<0.5%), and the sensitivity is increased through use of a luminescent substrate.

› Features

- Highly sensitive
- Specifically detects mBDNF

› Performance

Calibration curve range	0.205 - 50 pg/mL
Reactivity with human proBDNF	< 0.5%
Analysis sample	Mouse serum/plasma/brain lysate Rat serum/plasma Human serum/plasma/saliva
Sample volume	13 μ L (4-fold dilution)
Measurement duration	Approximately 4 hours
Detection method	Luminescence (A plate reader for luminescence measurement is required)

› Kit component

1. Antibody-coated Plate	1 plate
2. Mature BDNF Standard	1 vial
3. Buffer	60 mL
4. Biotin-conjugated Antibody 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. Plate Seal	4 sheets

› Reactivity with similar proteins

Cross-reactivity with proBDNF and the neurotrophin family (NGF, NT-3, and NT-4) was determined.

Proteins	Cross-reactivity (%)	Proteins	Cross-reactivity (%)
Human proBDNF	< 0.5	Mouse proBDNF	6.62
Human NGF β	< 0.5	Mouse NGF β	< 0.5
Human NT-3	< 0.5	Mouse NT-3	< 0.5
Human NT-4	< 0.5	Mouse NT-4	< 0.5

[Result]

The cross-reactivity was 6.62% for mouse proBDNF and <0.5% for other, similar proteins.

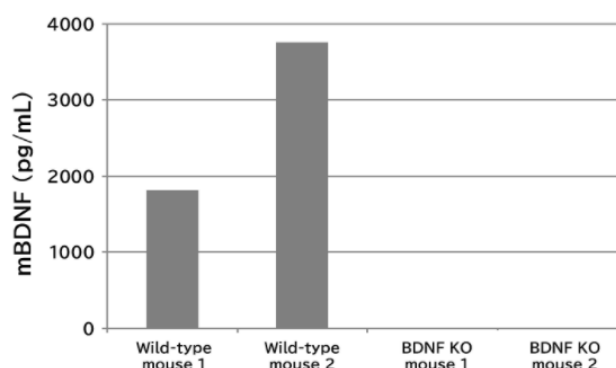
› Measurement in brain lysate in wild-type and BDNF knockout mice

To confirm the specificity for mBDNF, the kit was used to measure mBDNF in brain lysate collected from wild-type and BDNF knockout mice.

<Reference (BDNF knockout mouse)>
Conover, J. C., *et al.*: *Nature*, 375(6528), 235(1995).

[Result]

The mBDNF level was very low in BDNF knockout mice, demonstrating the specificity for BDNF.



› Measurement in serum and plasma in a mouse model of autism

The kit was used to measure mBDNF in serum and plasma collected from autistic mice (BTBR T+Itr3tf/J) and wild-type mice.

Sample	Mouse	Sample No.	Measured value (pg/mL)
Serum	BTBR mouse (Autism model mouse)	BTBR-1	12.4
		BTBR-2	18.1
		BTBR-3	16.1
	C57BL/6J (Wild type mouse)	B6J-1	6.96
		B6J-2	9.80
		B6J-3	9.01
Plasma (heparin)	BTBR mouse (Autism model mouse)	BTBR-4	11.1
		BTBR-5	9.73
	C57BL/6J (Wild type mouse)	B6J-4	6.93
		B6J-5	11.6

Product Number	Product Name	Grade	Package Size
298-83901	Mature BDNF ELISA Kit <i>Wako</i> , High Sensitive	for Immunochemistry	96 tests

■ Mature BDNF ELISA Kit *Wako*

Mature BDNF ELISA Kit *Wako* is a sandwich ELISA using mBDNF monoclonal antibody and mBDNF polyclonal antibody. The kit has low cross-reactivity to proBDNF (approx. 10%) because the monoclonal antibody reacts with N-terminal cutting surface of mBDNF.

› Performance

Calibration curve range	4.1 - 1,000 pg/mL
Reactivity with human proBDNF	Approximately 10%
Analysis sample	Human serum/plasma
Sample volume	Serum: 10 μ L (10-fold dilution) Plasma: 5 μ L (20-fold dilution)
Measurement duration	Approximately 4 hours
Detection method	Chromogenic

› Kit component

1. Antibody-coated Plate	1 plate
2. Mature BDNF Standard	1 vial
3. Buffer	60 mL
4. Biotin-conjugated Antibody Solution	100 μ L
5. Peroxidase-conjugated Streptavidin Solution	100 μ L
6. TMB Solution	6 mL
7. Stop Solution	6 mL
8. Wash Solution (10 x)	100 mL
9. Plate Seal	4 sheets

› Measured values of mature BDNF in serum from patients with psychiatric disorders

This kit was used to measure mBDNF in serum from psychiatric patients (major depression, Bipolar disorder, schizophrenia) and healthy control.

Healthy Control (n=6)	Major depression (n=6)	Bipolar disorder (n=4)	Schizophrenia (n=4)
18.1 \pm 3.41 ng/mL	16.3 \pm 4.02 ng/mL	15.1 \pm 4.53 ng/mL	16.6 \pm 5.17 ng/mL

[Result]

mBDNF could be quantified in the serum from psychiatric patients and healthy control.

Product Number	Product Name	Grade	Package Size
296-83201	Mature BDNF ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests

FAQ

Q. Are the antibodies in this kit sold separately?

A. No, they aren't.

Q. Can the kit be divided for use?

A. Yes, it can. The plate can be cut at every eight-well boundary, and lots are available for standard use.

Q. Which extraction buffer is recommended for the analysis of mouse brain lysate? (for high sensitive)

A. Use RIPA buffer containing a protease inhibitor. To eliminate the influence of surfactant components in the buffer, dilute it with the buffer included in the kit, by a factor of at least twice.

Related Products

› Anti BDNF Antibodies

Product Number	Product Name	Grade	Package Size
017-28071	Anti BDNF, Monoclonal Antibody(2D7)	for Immunochemistry	100 μ L
014-28081	Anti BDNF, Monoclonal Antibody(3C8)	for Immunochemistry	100 μ L

› A β ELISA Kit

Product Number	Product Name	Grade	Package Size
292-62301	Human β Amyloid(1-40) ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests
298-64601	Human β Amyloid(1-40) ELISA Kit <i>Wako</i> II	for Immunochemistry	96 tests
294-62501	Human/Rat β Amyloid(40) ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests
294-64701	Human/Rat β Amyloid(40) ELISA Kit <i>Wako</i> II	for Immunochemistry	96 tests
298-62401	Human β Amyloid(1-42) ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests
296-64401	Human β Amyloid(1-42) ELISA Kit <i>Wako</i> , High Sensitive	for Immunochemistry	96 tests
290-62601	Human/Rat β Amyloid(42) ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests
292-64501	Human/Rat β Amyloid(42) ELISA Kit <i>Wako</i> , High Sensitive	for Immunochemistry	96 tests
290-82001	High Molecular Amyloid β Oligomer ELISA Kit <i>Wako</i> Ver.2	for Immunochemistry	96 tests

› Tau ELISA Kit

Product Number	Product Name	Grade	Package Size
296-80401	Tau ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests
298-81701	Phosphorylated Tau T181 ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests

› Oxytocin ELISA Kit

Product Number	Product Name	Grade	Package Size
292-84401	Oxytocin ELISA Kit <i>Wako</i>	for Immunochemistry	96 tests

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