Wako Product Update

Biochemistry

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Please visit the Wako Online Catalog

http://www.e-reagent.com

Wako

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Research for Olfactory Nerve

Olfactory Marker Protein (OMP) is soluble acid protein expressed in mature olfactory nerve. This goat antiserum is highly specific for mature olfactory neurons and their axons and terminals in tissue sections of many vertebrate species including rodents, humans, marsupials and amphibia.

Working Dilutions:

Western Blot: ~ 1 : 50,000
Immunocytochemistry: 1 : 200 (paraffin embedded material) ~
1 : 50,000 (Vectastain-Elite with fixed floating sections)

Preparation: Goat antiserum to OMP (100μL) is diluted 1:1 with glycerol containing 0.05% sodium azide to facilitate shipment at ambient temperature.

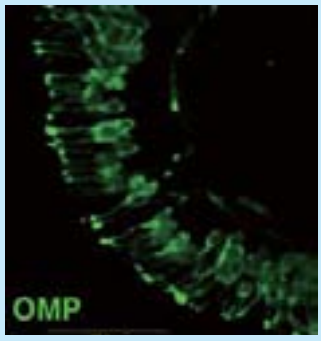


Figure. Immunofluorescence staining of adult mouse olfactory epithelium with goat anti-OMP (Wako Chemicals USA, Code # 544-10001).
Green : OMP staining was visualized with Cy2 (Jackson ImmunoResearch).
Data was provided by Dr.Frank L. Margolis and Dr. Jae Hyung Koo, Department of Anatomy and Neurobiology, School of Medicine, University of Maryland.

[References]

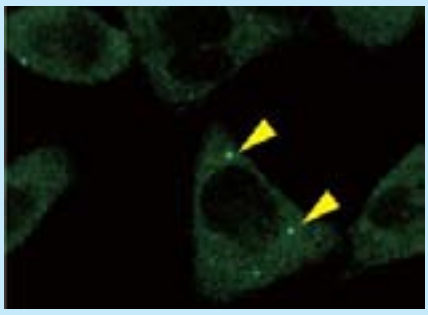
1) Baker, H. *et al.* : *J. Comp. Neurol.*, **285**, 246 (1989).
2) Buiakova, O. I. *et al.* : *Genomics*, **20**, 452 (1994).
3) Cummings, D. M. *et al.* : *J. Comp. Neurol.*, **421**, 362 (2000).
4) Keller, A. and Margolis, F. L. : *J. Neurochem.*, **24**, 1101 (1975).
5) Koo, J. H. *et al.* : *J. Neurochem.*, **90**, 102 (2004).
6) Koo, J. H. *et al.* : *J. Comp. Neurol.*, **487**, 1 (2005).
7) Rama Krishna, N. S. *et al.* : *Brain Res.*, **593**, 295 (1992).
8) Verhaagen, J. *et al.* : *J. Neurosci. Res.*, **26**, 31 (1990).

Description	Wako Cat. # (Pkg. Size)	Grade	Storage
Anti Olfactory Marker Protein, Goat [Anti OMP]	544-10001 (100 μL)	for Immunochemistry	Keep at –20 ˚C

Anti human AGO2, monoclonal antibody

Argonaute 2 (AGO2) is a protein identified as a main component of RNA Induced Silencing Complex (RISC), which recognizes and cleaves the target RNA in RNAi pathway. Recent studies have revealed that AGO2 and AGO1 are essential for RNAi and miRNA pathways, respectively.

Immunogen: recombinant human AGO2
Appearance: TBS solution containing 10% glycerol
Clone No.: 4 G 8
Purification method: Affinity purification
Specificity: specific to human AGO2
Dilute ratio in use:
Western blot 1:100
Immunoprecipitation 1:50
Immunocytechemistry 1:20 – 1:50



Stained image of HeLa cell
AGO2 localized to P-body (△) can also be detected.

Description	Wako Cat. # (Pkg. Size)	Grade	Storage
Anti Human AGO2, Monoclonal Antibody	016-20861 (50 μL)	for Immunochemistry	Keep at 2 ~ 10 ˚C

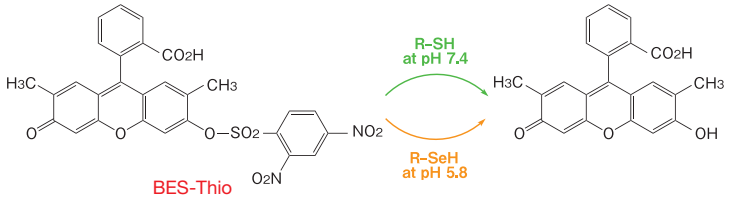
Highly Selective Fluorescent Probes

☆Thiol / Serenol selective fluorescent probe

BES-Thio

Several chemiluminescent and fluorescent reagents are known as a thiol group detection reagent, and used for detection of thiol groups or measurement of cholinesterase activity.
Most of these reagents have a low hydrophilicity, so separate reaction steps, enzyme and detection reactions, are required.
BES-Thio has a high hydrophilicity and can be used in aqueous solution. This feature makes it easy to measure the enzyme activity such as cholinesterase using acetylthiocholine or butyrylthiocholine as a substrate.
Furthermore, by pH adjustment, BES-Thio can also detect serenol groups, which sulfur (S) in thiol group is substituted by selenium (Se), and can be used for selenoprotein detection reagent.

[Features]
1. **High hydrophilicity**
2. **Respond to thiol at pH 7.4**
3. **Respond to serenol at pH 5.8**



BES-Thio
$C_{28}H_{18}O_{11}N_2S$=590.51

[References]

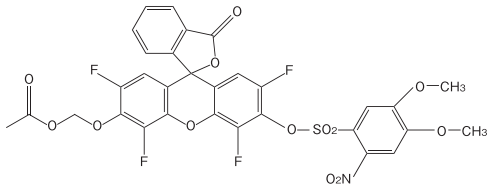
1) Maeda, H., Matsuno, H., Ushida, M., Katayama, K., Saeki, K. and Itoh, N.: *Angew. Chem. Int. Ed.*, **44**, 2922 (2005).
2) Maeda, H., Katayama, K., Matsuno, H. and Uno, T.: *Angew . Chem. Int . Ed.*, **45**, 1810 (2006).
3) Maeda, H: *Wako Jun-yaku Jiho*, **73** (3), 2 (2005) (written in Japanese).

☆Superoxide selective fluorescent probe

BES-So

Since superoxide ($O_2^{-\cdot}$) is an active oxygen having weak cytotoxicity, it is getting attention as a molecule positioned on the uppermost stream side of various active oxygen species.
$O_2^{-\cdot}$ is detected based on different chemiluminescence and fluorescence methods. Among these detection methods, hydroethidine is commonly used but existing probes including hydroethidine are pointed out to have low selectivity for $O_2^{-\cdot}$. BES-So shows a fluorescence by non-redox-reaction dependent mechanism, and indicates high selectivity for $O_2^{-\cdot}$.

[Features]
After cellular uptake, deacetoxymethyl compound by the action of cellular esterase responds to $O_2^{-\cdot}$



BES-So
$C_{31}H_{19}F_4O_{13}NS$=721.54

[References]

1) Maeda, H., Yamamoto, K., Nomura, Y., Kohno, I., Hafsi, L., Ueda, N., Yoshida, S., Fukuda, M., Fukuyasu, Y., Yamauchi, Y. and Itoh, N.: *J. Am. Chem. Soc.*, **127**, 68 (2005).

Selectivity		Description	Wako Cat. # (Pkg. Size)	Storage
Highly selective fluorescent probe	for Thiol or Serenol	**BES-Thio** <Fluorescence> λex: 495nm; λem: 535nm	025-15481 (1 mg)	RT
	for Superoxide	**BES-So** <Fluorescence> λex: 505nm; λem: 544nm	021-15601 (1 mg)	
Related Products				
Highly selective fluorescent probe	for Hydrogen Peroxide	BES-H_2O_2 <Fluorescence> λex: 485nm; λem: 515nm	029-15381 (1 mg)	

F-actin specific fluorescent probe

Phalloidin, Rhodamine X conjugated

for Cellbiology

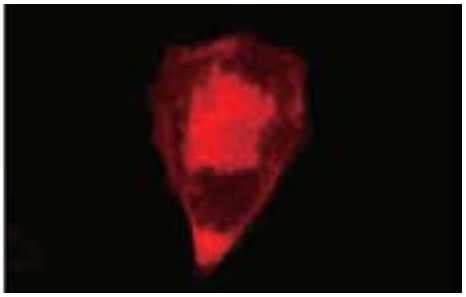
F-actin is a fibrous protein formed by polymerization of globular protein, G-actin, which has a molecular weight of about 42,000. It is also called microfilament. F-actin is one of the most abundant among component proteins of the cytoskeleton and is suggested to have unknown physiological functions other than its cytoskeletal function.
Phalloidin, a cyclic peptide, is known to contribute to inhibition of depolymerization by specific binding to actin. "Phalloidin, Rhodamin X conjugated" is a labeled phalloidin with rhodamine derivative and is a F-actin specific fluorescent probe.
"Phalloidin, Rhodamin X conjugated" is applicable to stain F-actin for the purpose of confirmation of cell shape, and analyses of cytoskeleton, cell motility and polarity.

[Features]
1. **High fluorescence intensity**
2. **Low background**

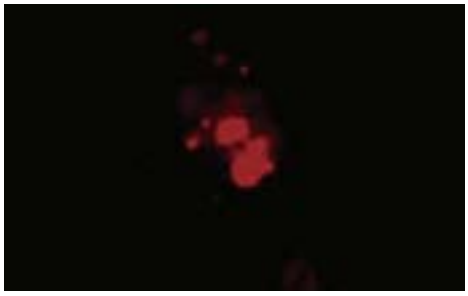
Comparison data

Actin was detected using "Phalloidin, Rhodamin X conjugated" (panel A) or the existing product (Rhodamin Phalloidin; panel B) under the same conditions.

Phalloidin, Rhodamin X conjugated
panel A



Rhodamin Phalloidin
panel B



Actin was detected by "Phalloidin, Rhodamin X conjugated" more clearly than by existing product (panel A).

Description	Wako Cat. # (Pkg. Size)	Color	Storage
Phalloidin, Rhodamine X conjugated <Fluorescence> λex: 556nm; λem: 574nm	165–21641 (300 tests*)	Red Fluorescence	Keep at −20 ˚C

Related Product

Description	Wako Cat. # (Pkg. Size)	Color	Storage
Phalloidin, Carbocyanine Dye 547 conjugated <Fluorescence> λex: 557nm; λem: 574nm	162–22011 (300 tests*)	Red Fluorescence	Keep at −20 ˚C

*: Usage for 1 test can stain fixed cells on 1slide glass.

Highly Sensitive β Amyloid (1-42) and (x-42) Detection Kits

These ELISA kits detecting β amyloid (1-42)(❶) and (x-42)*(❷) that ensure highly sensitive detection. These β amyloids are indicated to have a correlation with Alzheimer's disease. Detection sensitivity of the kits is about 10 times higher than that of the existing products (❻ and ❽) and the dynamic range is from 0.1 to 20.0 pmol/L. Fab' fragment of the labeled antibody is used as well so that the nonspecific binding is reduced.

∗ Aβ (x-42) is Aβ peptide modified or cleaved at the N-terminal.

[Features]

1. **Highly Sensitive Detection of A β (1-42) and A β (x-42) : Dynamic Range: 0.1 ~ 20.0 pmol/L**
2. **Specific detection of the C-terminal portion of A β 42 by using monoclonal antibody BC05 (Fab' fragment)**
3. **Highly specific monoclonal antibodies were provided by Takeda Pharmaceutical Company Ltd.**

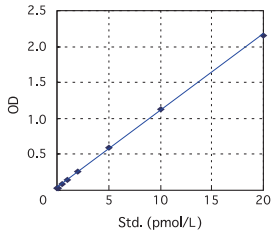
[Kit Contents of ❶, ❷, ❸ and ❹]

1.	Antibody-coated Microtiter Plate	1 plate
2.	Standard Solution	2 mL × 2 vials
3.	Standard Diluent	30 mL × 1 vial
4.	Wash Solution (20×)	50 mL × 1 vial
5.	HRP-conjugated Antibody Solution	12 mL × 1 vial
6.	TMB Solution	12 mL × 1 vial
7.	Stop Solution	12 mL × 1 vial
8.	Plate Seal	3 sheets

Standard Curve

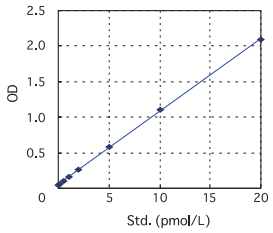
Human β Amyloid (1-42) ELISA Kit *Wako*, High-Sensitive (❶)

Std. (pmol/L)	Mean(n=3) (OD at 450nm)	CV (%)
0	0.023	2.55
0.1	0.035	2.86
0.5	0.083	1.20
1.0	0.142	1.46
2.0	0.266	0.65
5.0	0.591	2.72
10.0	1.132	3.08
20.0	2.159	2.20

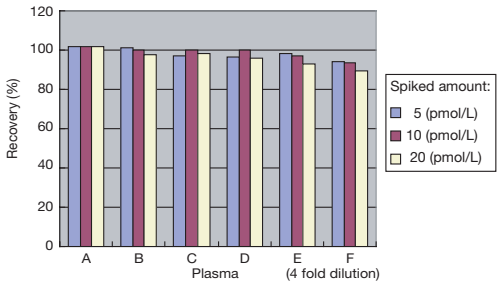


Human/Rat β Amyloid (42) ELISA Kit *Wako*, High-Sensitive (❷)

Std. (pmol/L)	Mean(n=3) (OD at 450nm)	CV (%)
0	0.046	1.26
0.1	0.056	2.74
0.5	0.097	2.39
1.0	0.154	0.99
2.0	0.264	1.31
5.0	0.582	1.07
10.0	1.099	0.48
20.0	2.092	1.01



Spike Recovery (n=3)

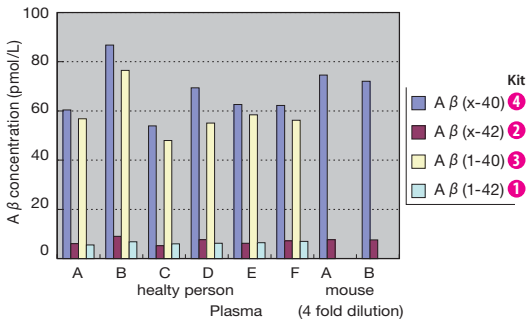


Specificity (n=4)

(%)

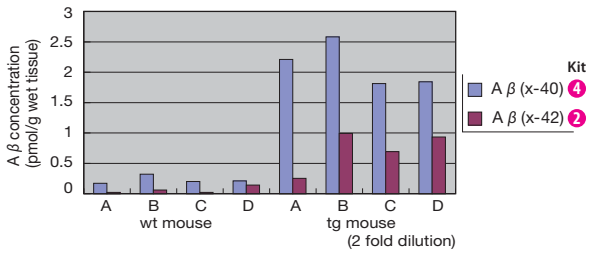
Synthetic Peptide	❶Human β Amyloid (1-42) ELISA Kit *Wako*, High-Sensitive	❷Human/Rat β Amyloid (42) ELISA Kit *Wako*, High-Sensitive
Human A β (1-40)	≦0.1	≦0.1
Human A β (1-42)	100.0	100.0
Human A β (1-43)	13.5	12.7
Rat (mouse) A β (1-40)	≦0.1	≦0.1
Rat (mouse) A β (1-42)	0.54	156.0

Application Data [1] human and mouse plasma



Blood was collected using vacuum blood collection tube containing EDTA-2K. Plasma was separated by centrifugation at 5000 x g for 15 minutes at 4 ˚C and stored at –80 ˚C until used.
The plasma sample was diluted 4-fold with Standard Diluent in the Kit and measured. (A**β** (1-40) and A**β** (x-40) were measured by Human **β** Amyloid (1-40) ELISA Kit *Wako* II (Cat.# 298-64601, ❸) and Human/Rat **β** Amyloid (40) ELISA Kit *Wako* II (Cat.#294-64701, ❹))

[2] mouse brain tissue



The hemisphere of 12-month mouse (J20) was extracted with 2 mL of Tris Saline and stored frozen at -20 ˚C until used. The brain sample was diluted 2-fold with Standard Diluent in the Kit and measured. A trace quantity of A**β** could be detected not only in the transgenic mice (tg) but in the wildtype mice (wt).

(Data provided by Prof. Iwatsubo and Instructor Hashimoto, Department of Neuropathology and Neuroscience, Graduate School of Pharmaceutical Sciences, University of Tokyo)

	Description	Wako Cat. # (Pkg. Size)	Determination	Storage
	High sensitive detection of A β (1-42) and A β (x-42)			
❶	**Human β Amyloid (1-42) ELISA Kit Wako,** High Sensitive	296-64401 (96 tests)	human Aβ (1-42)	Keep at 2 ~ 10 ˚C
❷	**Human/Rat β Amyloid (42) ELISA Kit Wako,** High Sensitive	292-64501 (96 tests)	human, rat and mouse Aβ (x-42)	

Improved β Amyloid (1-40) and (x-40)* Detection Kits

These products are detection kits that achieve more stable antigen-antibody reactions by using $F(ab')_2$ fragment of the labeled antibody BA27, which recognizes the C-terminal of Aβ 40, while the nonspecific binding is remaining to be reduced. Therefore, the stability in washing solution is improved. In Human/Rat kit, background is reduced.

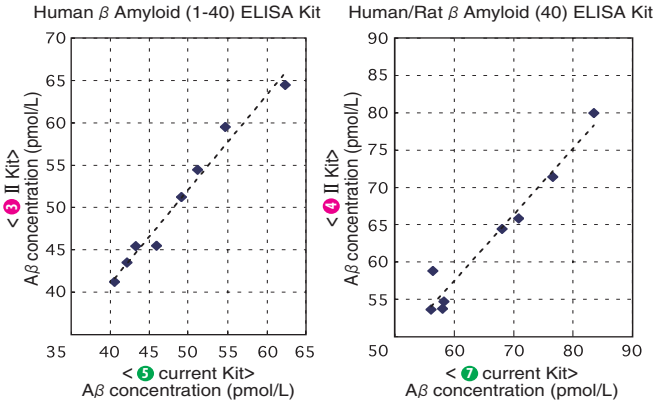
* Aβ (x-40) is Aβ peptide modified or cleaved at the N-terminal.

[Improvement in Quality]
- **<❸ and ❹> Achieve more stable antigen-antibody reaction by using BA27 ($F(ab')_2$-HRP)**
- **<❹> Human/Rat β Amyloid (40) ELISA Kit *Wako* II ••• Background is reduced by 60% compared to current kit** (#294-62501, ❼)

II Kit-current kit Correlation

(pmol/L)

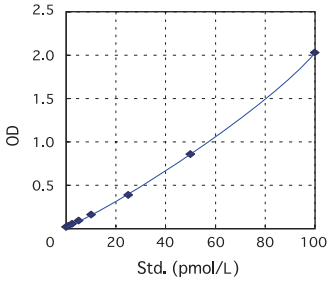
Sample	Human β Amyloid (1-40) ELISA Kit		Human/Rat β Amyloid (40)ELISA Kit	
	II Kit (❸) ($F(ab')_2$-HRP)	current kit (❺) (Fab'-HRP)	II Kit (❹) ($F(ab')_2$-HRP	current kit (❼) (Fab'-HRP)
plasma A	45.9	45.5	56.4	58.8
plasma B	49.1	51.2	68.1	64.4
plasma C	62.4	64.4	83.5	79.9
plasma D	40.5	41.2	56.1	53.6
plasma E	42.1	43.5	58.0	53.7
plasma F	43.3	45.4	58.3	54.7
plasma G	54.7	59.5	76.7	71.4
plasma H	51.2	54.4	70.9	65.8



Standard Curve

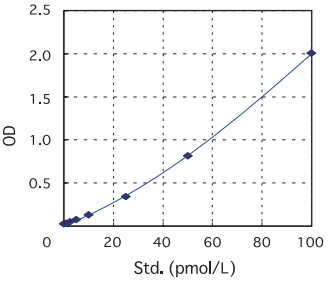
Human β Amyloid (1-40) ELISA Kit *Wako* II (❸)

Std. (pmol/L)	Mean(n=3) (OD at 450nm)	CV (%)
0	0.019	2.99
1.0	0.033	1.73
2.5	0.054	0.00
5.0	0.093	2.49
10.0	0.162	6.67
25.0	0.388	7.70
50.0	0.859	9.14
100.0	2.031	0.67



Human/Rat β Amyloid (40) ELISA Kit *Wako* II (❹)

Std. (pmol/L)	Mean(n=3) (OD at 450nm)	CV (%)
0	0.024	16.61
1.0	0.032	1.79
2.5	0.047	2.13
5.0	0.073	0.79
10.0	0.130	0.55
25.0	0.340	0.74
50.0	0.814	1.72
100.0	2.005	1.37



Reaction time for HRP-conjugated antibody is 2 hours.

	Description	Wako Cat. # (Pkg. Size)	Determination	Storage
Aimed at stable Antigen-Antibody Reaction				
❸	**Human β Amyloid (1-40) ELISA Kit *Wako* II**	298-64601 (96 tests)	Human Aβ (1-40)	Keep at 2~10 ˚C
❹	**Human/Rat β Amyloid (40) ELISA Kit *Wako* II**	294-64701 (96 tests)	Human, rat and mouse Aβ (x-40)	

Related Products

	Description	Wako Cat. # (Pkg. Size)	Determination	Storage
❺	Human β Amyloid (1-40) ELISA Kit *Wako*	292-62301 (96 tests)	Human Aβ (1-40)	Keep at 2~10 ˚C
❻	Human β Amyloid (1-42) ELISA Kit *Wako*	298-62401 (96 tests)	Human Aβ (1-42)	
❼	Human/Rat β Amyloid (40) ELISA Kit *Wako*	294-62501 (96 tests)	Human, rat and mouse Aβ (x-40)	
❽	Human/Rat β Amyloid (42) ELISA Kit *Wako*	290-62601 (96 tests)	Human, rat and mouse Aβ (x-42)	

Peptide Institute Inc.'s Products

Description	Wako Cat. # (Pkg. Size)	Peptide's prod. #
Amyloid β-Protein Fragments		
Amyloid β-Protein (Human, 1-40)	330-43071 (0.5 mg)	4307-v
Amyloid β-Protein (Human, 1-40)[HCl Form]	336-43791 (0.5 mg)	4379-v
Amyloid β-Protein (Human, 1-42)	338-43491 (0.5 mg)	4349-v
Amyloid β-Protein (Human, 1-43)	333-43701 (0.5 mg)	4370-v
Amyloid β-Protein (Human, 1-16)	334-43591 (0.5 mg)	4359-v
Amyloid β-Protein (Human, 25-35)	334-43091 (0.5 mg)	4309-v
[Pyr3]-Amyloid β-Protein (Human, 3-42)	336-43671 (0.5 mg)	4367-v
β-Sheet Breaker Peptide iAβ5	337-43581 (5 mg)	4358-v
Amyloid β-Protein Control Peptide		
Amyloid β-Protein (40-1)	332-44131 (0.1 mg)	4413-s
Amyloid β-Protein (42-1)	337-44201 (0.1 mg)	4420-s
α-Secretase Inhibitor		
Lys-Thr-Glu-Glu-Ile-Ser-Glu-Val-Asn-Sta-Val-Ala-Glu-Phe	339-43781 (1 mg)	4378-v
β-Secretase Inhibitor		
MOCAc-Ser-Glu-Val-Asn-Leu-Asp-Ala-Glu-Phe-Arg-Lys(Dnp)-Arg-Arg-NH_2	334-32121 (1 mg)	3212-v
γ-Secretase Inhibitor		
L-685, 458	333-43941 (1 mg)	4394-v
(3,5-Difluorophenylacetyl)-Ala-Phg-Obu^t	333-32191 (5 mg)	3219-v
γ-Secretase Substrate		
N-Gly-Gly-Val-Val-Ile-Ala-Thr-Val-Lys(Dnp)-D-Arg-D-Arg-D-Arg-NH_2	339-32171 (1 mg)	3217-v
Antiserum		
Amyloid β-Protein (Human, 1-16) Antiserum	330-00231 (50 μL)	14359-v
Amyloid β-Protein (Human, 1-40) Antiserum	330-00111 (50 μL)	14307-v
Amyloid β-Protein (Human, 34-40) Antiserum	336-00211 (50 μL)	14356-v
Amyloid β-Protein (Human, 37-42) Antiserum	333-00221 (50 μL)	14357-v
Amyloid β-Protein (Human, 37-43) Antiserum	334-00491 (50 μL)	14414-v

4. Hyperthermostable Enzymes, performed higher than 70˚C effectively

Description	Source	Wako Cat. #	Pkg. Size	Remarks
DNA Ligase, thermostable, recombinant, solution	hyperthermophilic archaeon *Aeropyrum pernix* K1	294-64201	25 μL	Kit Contents: 1) DNA Ligase, thermostable, recombinant, solution 1 × 25 μL 2) 10× Reaction Buffer * 1 × 50 μL *: 0.5 mol/L Tris-HCl, pH 7.5, 50 mmol/L KCl, 1 mmol/L ATP, 150 mmol/L $MgCl_2$ and 50 mmol/L DTT
Connects double strand DNA at over 70˚C. The ligase remains stable for 1 hour treatment at 100˚C, and for more than 3 hour treatment at 95˚C. [Reference] Jeon SJ. and Ishikawa K., *FEBS Lett.*, **550**, 69-73 (2003).				
Cellulase, thermostable, recombinant, solution	hyperthermophilic archaeon *Pyrococcus horikoshii* OT3	030-19871	1 mL	Storage Buffer: 20 mmol/L Tris-HCl, pH 8.0
A hyperthrmostable endoglucanase hydrolyzes cellulose, including Avicel and carboxymethyl cellulose at over 70˚C. Keep the enzymatic activity even at 90 ~ 100˚C. It can dissolve insoluble cellulose such as crystalline cellulose. [Reference] 1) Kashima, Y., Mori, K., Fukuda, H. and Ishikawa, K., *Extremophiles.*, **9**(1), 37 (2005). 2) Ando S., Ishida H., Kosugi Y. and Ishikawa K., *Appl. Environ. Microbiol.*, **68**, 430-3 (2002).				
Chitinase, thermostable, recombinant, solution	*Pyrococcus furiosus*	034-19891	1 mL	Storage Buffer: 20 mmol/L Tris-HCl, pH 7.5
Digests chitin into *N*-acetylglucosamine. Shows strong chitinolytic activity with α-chitin, which is hard to be enzymaticaly degraded, as well as β-chitin as substrate.				
Inositol 1-monophosphate synthetase, thermostable, recombinant, solution	hyperthermophilic archaeon *Aeropyrum pernix* K1	090-15381	1 mL	Storage Buffer: 20 mmol/L Tris-HCl, pH 8.0, 1mmol/L DTT
Converts glucose-6-phosphate into inositol-1-phosphate.				

These products are manufactured by Thermostable Enzyme Laboratory Co., Ltd. (Osaka, Japan)
Please visit the following address to get further information: http://www.tainetsu.com/

Molecular Weight Markers

Prestained Markers (❶, ❷)

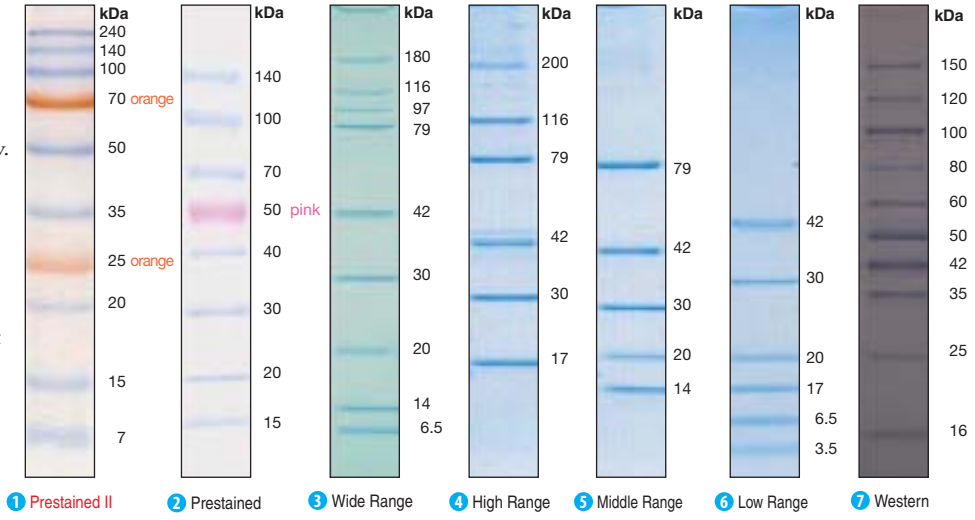
Proteins bound to dyes in advance.
Proper identification of each protein is ensured.
Suitable for monitoring the migration and judging western transfer efficiency.

Unstained Markers (❸ ~ ❻)

produce clear stains and each band is evenly stained because the protein bands are reduced and alkylated.

Western Blotting Marker (❼)

reacts to both the primary and secondary antibodies in Western blot due to recombinant protein (protein G)



[Product List]

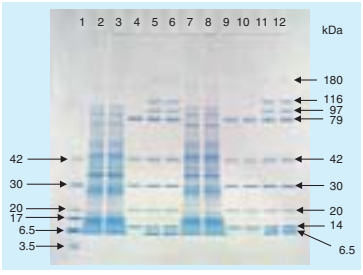
Description		Wako Cat. #	Pkg. Size		
Prestained Markers					
❶	**WIDE-VIEW™ Prestained Protein Size Marker II**	239-02291	500 μL	for 100 tests	Requires no heating prior to use after reconstitution.
❷	WIDE-VIEW™ Prestained Protein Size Marker	230-02221	500 μL	for 100 tests	
Unstained Markers					
❸	Molecular Weight Marker, Wide Range	296-63301	for 1 mL	for 200 tests	Each protein band is reduced and alkylated.
❹	Molecular Weight Marker, High Range	134-14501	for 1 mL	for 200 tests	
❺	Molecular Weight Marker, Middle Range	131-14511	for 1 mL	for 200 tests	
❻	Molecular Weight Marker, Low Range	294-63101	for 1 mL	for 200 tests	
Western Blotting Marker					
❼	WIDE-VIEW™ Western Size Marker	233-02211	250 μL	for 50~250 tests	Highly purified recombinant proteins (Protein G) are contained.

SuperSep™

Supersep™ is a precast polyacrylamide gel for electrophoresis of proteins or nucleic acids. Because the gel does not contain SDS, it can be used for SDS-PAGE in SDS-containing buffer, and for Native-PAGE in buffers that do not contain SDS.

[Features]

1. **Superior stability (Stable for 6 ~ 9 months, depending on item)**
2. **Excellent reproducibility**
3. **Large well volume enables large application volume of sample (12 well: 35 μL; 17 well: 25 μL)**
4. **High western transfer efficiency of protein to PVDF membrane**
5. **SuperSep™ HG gel allows for high separation efficiency due to new manufacturing technology**



Gel : SuperSep™ HG, 5-20%, 12well (Wako Cat. #195-13611)
Reagents : Sample Buffer Soln. (x2,2-ME+) (Wako Cat. #196-11022)
Running Buffer Soln. (x10)(Wako Cat. #184-01291)
Staining : Quick-CBB PLUS (Wako Cat. #178-00551)
Sample : Lane 1: MW Marker ❻, Lane 4, 9, 10: MW Marker ❺,
Lane 5, 6, 11, 12: MW Marker ❸
Lane 2, 3, 7, 8: *Escherichia coli* proteins

Physical Properties
Plate Size: 100(H)×100(W)×3(T)(mm)
Sample Volume / well: 35μL(12well), 25μL(17well)
☆Recommendable loading volume: 10μL

Description	Wako Cat. # (Pkg. Size)		Separation range	
SuperSep™ 7.5%	192-12901 (12 well × 10 plates)	199-12911 (17 well × 10 plates)	40 ~ 200 kDa	100 ~750 bp
SuperSep™ 10%	196-12921 (12 well × 10 plates)	193-12931 (17 well × 10 plates)	20 ~ 130 kDa	50 ~500 bp
SuperSep™ 12.5%	190-12941 (12 well × 10 plates)	197-12951 (17 well × 10 plates)	14 ~ 80 kDa	30 ~300 bp
SuperSep™ 15%	194-13061 (12 well × 10 plates)	191-13071 (17 well × 10 plates)	6 ~ 60 kDa	20 ~300 bp
SuperSep™ 5-20%	194-12961 (12 well × 10 plates)	191-12971 (17 well × 10 plates)	10 ~ 200 kDa	50 ~750 bp
SuperSep™ 10-20%	198-12981 (12 well × 10 plates)	195-12991 (17 well × 10 plates)	10 ~ 130 kDa	50 ~500 bp
SuperSep™ 12.5%, 2D*	190-13301 (1 well × 10 plates)		14 ~ 80 kDa	30 ~300 bp
SuperSep™ 5-20%, 2D	197-13291 (1 well × 10 plates)		10 ~ 200 kDa	50 ~750 bp
SuperSep™ HG, 5-20%	195-13611 (12 well × 10 plates)	192-13621 (17 well × 10 plates)	10 ~ 200 kDa	50 ~750 bp
SuperSep™ HG, 10-20%	199-13631 (12 well × 10 plates)	196-13641 (17 well × 10 plates)	10 ~ 130 kDa	50 ~500 bp

*: 2D is a convenient gel to perform 2D electrophoresis with SDS-PAGE.

Prostaglandin J_2 derivative

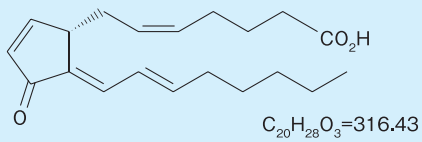
for Cellbiology

Prostaglandins (PGs) are a group of biologically active substances synthesized from eicosapolyenoic acids such as arachidonic acid by the action of cyclooxygenase (COX) in animal tissues. PGs have been attracting attention as a mediator involved in intracellular signaling mechanism and physiological regulating function.

In particular, prostaglandin J_2s (PGJ_2s) are reported

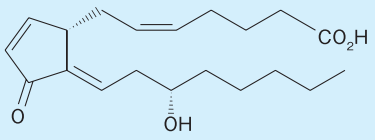
1) to have antiinflammatory and antitumor effects
2) to act as a ligand of nuclear receptors such as PPARγ
3) to regulate the function of target proteins by covalent binding to cysteine residue in the proteins

15-Deoxy-$\Delta^{12,14}$-prostaglandin J_2



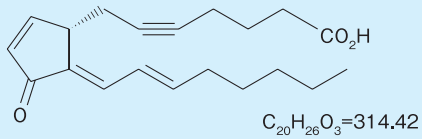
$C_{20}H_{28}O_3$=316.43

Δ^{12}-prostaglandin J_2



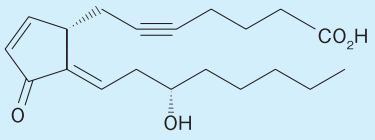
$C_{20}H_{30}O_4$=334.45

15-Deoxy-$\Delta^{12,14}$-prostaglandin J_2, Acetylene Analog



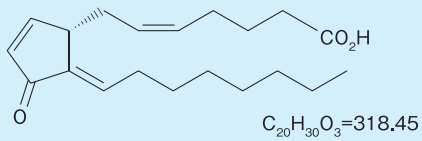
$C_{20}H_{26}O_3$=314.42

Δ12-prostaglandin J_2, Acetylene Analog



$C_{20}H_{28}O_4$=332.43

15-Deoxy-Δ^{12}-prostaglandin J_2



$C_{20}H_{30}O_3$=318.45

[Storage Condition]
-80°C, protect from light, containing innert gas

[Concentration]
Each product is the 0.01 mol/L ethanol solution.

Description	Wako Cat. #	Pkg. Size
0.01mol/L 15-Deoxy-$\Delta^{12,14}$-prostaglandin J_2 • Ethanol Solution	047-29691	1 mg
0.01mol/L 15-Deoxy-$\Delta^{12,14}$-prostaglandin J_2, Acetylene Analog • Ethanol Solution	040-29701	500 µg
0.01mol/L 15-Deoxy-Δ^{12}- prostaglandin J_2 • Ethanol Solution	047-29711	500 µg
0.01mol/L Δ^{12}-Prostaglandin J_2 • Ethanol Solution	167-22201	500 µg
0.01mol/L Δ^{12}-Prostaglandin J_2, Acetylene Analog • Ethanol Solution	162-22251	500 µg

Acetyl- and diacetyl- polyamines

for Cellbiology

There are over 20 types of polyamines *in vivo* and these are known to be abundantly distributed in the actively proliferating regions such as cancer tissues. In such regions, polyamines are also actively metabolized. Studies show that urinary excretion of polyamines is increased in the patients with cancer. In particular, for N^1, N^8-diacetylspermidine and N^1, N^{12}-diacetylspermin, diacetylated forms of spermidine and spermin, which are representative polyamines, it is reported that urinary excretion is markedly increased.

Description	Wako Cat. #	Storage
***N^1*-Acetylspermidine *n*-Hydrochloride**	010-20381 (40 mg)	Keep at 2~10 °C
***N^1*,*N^8*-Diacetylspermidine**	017-20411 (40 mg)	
***N^1*-Acetylspermine *n*-Hydrochloride**	014-20421 (40 mg)	
***N^1*,*N^{12}*-Diacetylspermin *n*-Hydrochloride**	045-29511 (40 mg)	

Food Intake Suppressor

Ghrelin, a circulating appetite-inducing hormone, is derived from a prohormone by posttranslational processing. On the basis of the bioinformatic prediction that another peptide also derived from proghrelin exists, a hormone was isolated from rat stomach and named it obestatin-a contraction of obese, from the Latin "obedere," meaning to devour, and "statin," denoting suppression. Contrary to the appetite-stimulating effects of ghrelin, treatment of rats with obestatin suppressed food intake, inhibited jejunal contraction, and decreased body-weight gain. Obestatin bound to the orphan G protein-coupled receptor GPR39. Thus, two peptide hormones with opposing action in weight regulation are derived from the same ghrelin gene. After differential modification, these hormones activate distinct receptors.[1)]

Obestatin
<Human> Phe- Asn- Ala- Pro- Phe- Asp- Val- Gly- Ile- Lys- Leu- Ser- Gly- Val- Gln- Tyr- Gln- Gln- His- Ser- Gln- Ala- Leu- NH_2
<Rat, Mouse> Phe- Asn- Ala- Pro- Phe- Asp- Val- Gly- Ile- Lys- Leu- Ser- Gly- Ala- Gln- Tyr- Gln- Gln- His- Gly- Arg- Ala- Leu- NH_2

Ghrelin
<Human> Gly- Ser- Ser(*n*- Octanoyl)- Phe- Leu- Ser- Pro- Glu- His- Gln- Arg- Val- Gln- Gln- Arg- Lys- Glu- Ser- Lys- Lys- Pro- Pro- Ala- Lys- Leu- Gln- Pro- Arg
<Rat> Gly- Ser- Ser(*n*- Octanoyl)- Phe- Leu- Ser- Pro- Glu- His- Gln- Lys- Ala- Gln- Gln- Arg- Lys- Glu- Ser- Lys- Lys- Pro- Pro- Ala- Lys- Leu- Gln- Pro- Arg

Des- Acyl Ghrelin
<Human> Gly- Ser- Ser- Phe- Leu- Ser- Pro- Glu- His- Gln- Arg- Val- Gln- Gln- Arg- Lys- Glu- Ser- Lys- Lys- Pro- Pro- Ala- Lys- Leu- Gln- Pro- Arg
<Rat> Gly- Ser- Ser- Phe- Leu- Ser- Pro- Glu- His- Gln- Lys- Ala- Gln- Gln- Arg- Lys- Glu- Ser- Lys- Lys- Pro- Pro- Ala- Lys- Leu- Gln- Pro- Arg

[Reference] 1) J. V. Zhang, *et al*., Science, **310**, 996 (2005).

Description	Wako Cat. # (Pkg. Size)	Peptide's prod. #	Chemical Formula = M.W.	Production	Storage
Food Intake Suppressor / Ligand for GPR39				Synthetic	−20°C
Obestatin (Human)	330-44291 (0.1 mg)	4429-s	$C_{116}H_{176}N_{32}O_{33}$ = 2546.8		
Obestatin (Rat, Mouse)	333-44301 (0.1 mg)	4430-s	$C_{114}H_{174}N_{34}O_{31}$ = 2516.8		
Related Products					
Endogenous Growth-Hormone Releasing Peptide with Novel Regulatory Mechanism					
Ghrelin (Human)	337-43721 (0.1 mg)	4372-s	$C_{149}H_{249}N_{47}O_{42}$ = 3370.9		
Ghrelin (Rat)	334-43731 (0.1 mg)	4373-s	$C_{147}H_{245}O_{45}N_{42}$ = 3314.8		
Des-Octanoyl Ghrelin with Distinct Effect on Food Intake					
Des- Acyl Ghrelin (Human) [Des-*n*-Octanoyl Ghrelin]	- (0.1 mg)	4436-s	$C_{141}H_{235}N_{47}O_{41}$ = 3244.7		
Des- Acyl Ghrelin (Rat)	- (0.1 mg)	4437-s	$C_{139}H_{231}N_{45}O_{41}$ = 3188.6		

Sericin, a silk protein

Sericin derived from silkworm is an effective supplement instead of FBS for mammalian cell culture medium.

The effects of medium containing sericin[1), 2)] :
- ***Stimulation of cell proliferation***
- ***Suppression of cell-death***

Furthermore, serum-free freezing medium containing 1(w/v)% sericin successfully cryopreserved both P3U1 myeloma cell line and Chinese-hamster ovary cells as efficiently as the conventional medium of FBS containing 10% DMSO[3)].

Sericin is an efficient factor as a component of serum-free cell freezing medium

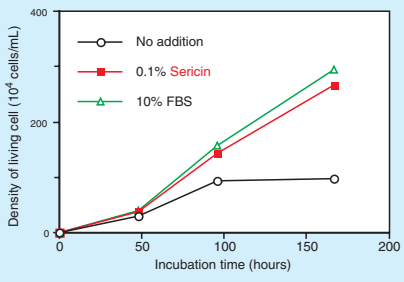


Figure : Change in density of Living cell

(Courtesy: Terada, S., Department of Applied Chemistry and Biotechnology, University of Fukui, Japan)

[References]
1) Terada, S., Nishimura, T., Sasaki, M., Yamada, H. and Miki, M.: *Cytotechnology*, **40,** 3 (2002).
2) Terada, S., Sasaki, M., Yanagihara, K. and Yamada, H.: *J. Biosci. Bioeng.***100**, 667 (2005).
3) Sasaki, M., Kato, Y., Yamada, H. and Terada, S.: *Biotechnol. Appl. Biochem.*, **42**, 183 (2005).
4) Ogawa, A., Terada, S., Kanayama, T., Miki, M., Morikawa, M., Kimura, T., Yamaguchi, A., Sasaki, M. and Yamada, H.: *J. Biosci. Bioeng.*, **98**, 217 (2004)
5) Yanagihara, K., Terada, S., Miki, M., Sasaki, M. and Yamada, H.: *Biotechnol. Appl. Biochem.*, **45**, 59 (2006).

Description	Wako Cat. # (Pkg. Size)	Grade
Pure Sericin [Sericin]	167-22681 (1 g)	for Cell Culture
	163-22683 (5 g)	

Extracellular Matrix [ECM]

for Cellbiology

Various kinds of extracellular matrix form complex web structures and fill the extracellular space. The main components of the extracellular matrix include collagen, elastin, proteoglycan and laminin. As well as having physical function as a cell attachment factor, these components are known to have biological function, including cell morphogenesis, migration, differentiation and proliferation, mediated by receptors and extracellular factors such as cytokines.

Elastin

[Features]
1. **Extracellular matrix comprising elastic fiber**
2. **Water-soluble**
3. **Extracted and purified from domestic raw materials**

Description	Wako Cat. # (Pkg. Size)	Storage
Elastin, Water Soluble, from Bovine Neck Ligament, lyophilized	054-07421 (100 mg)	Keep at –20℃
Elastin, Water Soluble, from Horse Neck Ligament, lyophilized	053-07491 (100 mg)	
Elastin, Water Soluble, from Porcine Aorta, lyophilized	056-07481 (100 mg)	

Proteoglycan, from Salmon Nasal Cartilage

[Features]
1. **Extracellular matrix having excellent water holding capacity**
2. **Chondroitin sulfate proteoglycan**
3. **Lower cost than existing proteoglycan**

Description	Wako Cat. # (Pkg. Size)	Storage
Proteoglycan, from Salmon Nasal Cartilage, lyophilized	162-22131 (10 mg)	Keep at –20℃
	168-22133 (50 mg)	

Related Products

Description	Wako Cat. #	Storage
Collagen, Type I, from Salmon Skin, lyophilized	031-19443 (200 mg)	Keep at –20℃
	035-19441 (1 g)	

- 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 Wako ; **http://www.e-reagent.com**
- This brochure may contain products that cannot be exported to your country due to regulations.
- Bulk quote requests for some products are welcomed. Please contact us.

06Y15IBK

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