

SDS-PAGE

Western Blotting



Supporting Next Century's Science

Nacalai USA
Innovations for Life Sciences.



CosmoPAGE Precast Gel

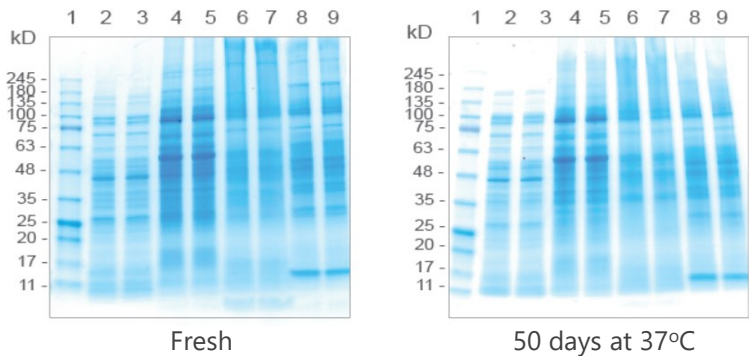
Features

- Consistent performance
- Compatible with Bio-Rad Mini-PROTEAN® Core
- Sharp, straight bands
- Long shelf life; Up to 12 months



Consistent Performance

CosmoPAGE gels perform high protein resolution and reproducibility even stored at ambient temperature for 50 days.



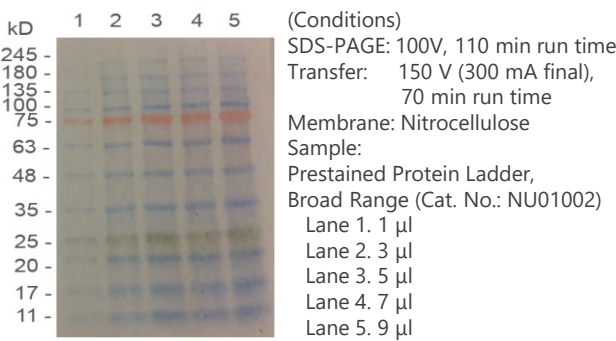
(Conditions)
Gel : CosmoPAGE TG Gel 4-15 %
Voltage: 150V for an hour
Sample:
Lane 1. Prestained Protein Ladder, Broad Range, 3 µl (#NU01002)
Lane 2. 3. E. coli lysate
Lane 4. 5. Hek293T lysate
Lane 6. 7. Mouse brain membrane
Lane 8. 9. Mouse brain cytosol (10 µg each)

Compatibility

Compatible with the Bio-Rad Mini-PROTEAN® Core system without use of extra adapters.



High Transfer Efficiency



Protein Migration Chart

% length of gel	TG gel		Bis-Tris gel			
	10 %	4-15 %	12 %		4-12 %	
	TG	TG	MOPS	MES	MOPS	MES
0						
10	200	200	200	200		200
20	116		116	116	200	116
30		116		66	116	66
40	66		45	45		45
50		66		31	66	
60	45		31	21		31
70		45		14	45	21
80	31		21	6		14
90		31			31	
100	21		14		21	6
		21	6		14	
		14				
		6				



Ordering Information

Product Name	Cat. No.	PKG size	Price
CosmoPAGE TG (Tris-Glycine) Precast Gel, 10%, 15 wells	NU001015	10 gels	\$ 89.00
CosmoPAGE TG (Tris-Glycine) Precast Gel, 4-15%, 15 wells	NU041515	10 gels	\$ 89.00
CosmoPAGE Bis-Tris Precast Gel, 12%, 15 wells	NU001215	10 gels	\$ 89.00
CosmoPAGE Bis-Tris Precast Gel, 4-12%, 15 wells	NU041215	10 gels	\$ 89.00
CosmoPAGE MOPS Running Buffer, Powder	NU01004	5 x 1 L	\$ 25.00
CosmoPAGE Tris-Glycine Running Buffer, Powder	NU01011	5 x 1L	\$ 25.00
Running Buffer Solution (10x) for SDS - PAGE, Tris - Glycine	30329-61	1 L	\$ 63.00
	30329-74	5 L	\$ 231.00

Sample Buffer Solution for SDS-PAGE (6x)

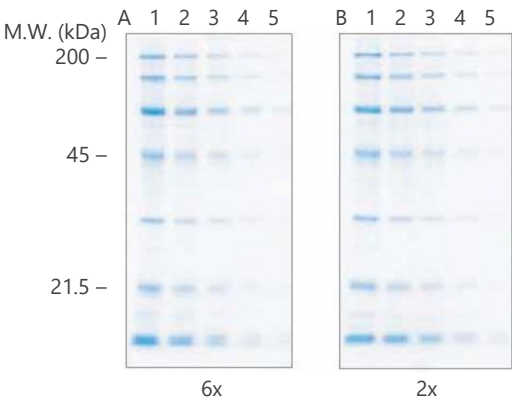
Features

- Suitable for low concentration protein sample adjustment
- No precipitation in the refrigerator
- Two types; with and without reducing agent

Comparison of 6x and 2x

The data right shows that both 2x and 6x sample buffer solution have the same separation patterns. Using the Sample Buffer Solution (6x) enables reduction of valuable protein sample for SDS-PAGE.

(Conditions)
Prepare two types of sample buffer solutions, A: 6x and B: 2x of protein markers and separated by SDS-PAGE with 12% acrylamide gel. For staining, CosmoPAGE Bullet CBB (NU 01003) was used.
Amount of protein of each lane was Lane 1: 5.1 µg, 2: 2.5µg, 3: 1.3 µg, 4: 0.51 µg and 5: 0.26 µg.



Ordering Information

Product Name	Cat. No.	PKG size	Price
Sample Buffer Solution with Reducing Reagent (6x)	09499-14	5 ml	\$ 53.00
Sample Buffer Solution without Reducing Reagent (6x)	09500-64	5 ml	\$ 53.00
Sample Buffer Solution without 2-ME (2x)	30567-12	25 ml	\$ 59.00

Related Products

Product Name	Cat. No.	PKG size	Price
Tris(2-carboxyethyl)phosphine Hydrochloride [TCEP]	07277-61	1 g	\$ 91.00
	07277-16	10 g	\$ 405.00

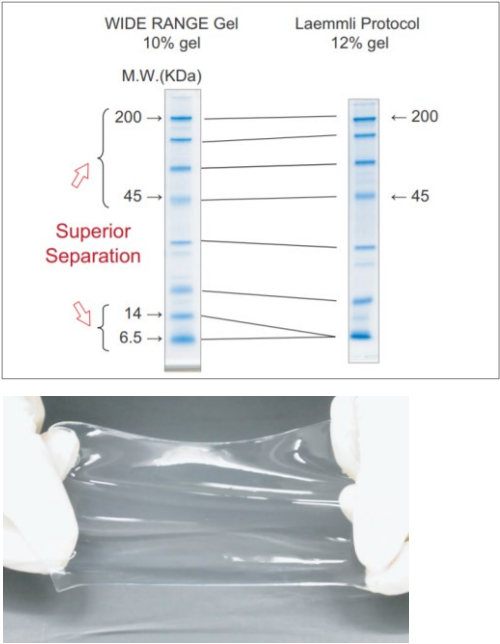


WIDE RANGE Gel Preparation Buffer (4x) for PAGE

Features

- Simple casting procedures
WIDE RANGE Gel Preparation buffer is a 4x concentrated neutral pH buffer. It can be used for preparation of both stacking gel and resolving gel by replacing the Tris-HCL buffer in Laemmli buffer system.
- A wide separation range
WIDE RANGE Gel provides a much greater separation range than the gel casted with a conventional Laemmli buffer system.
- Improved stability and strength
The increased tensile strength allows easy handling even a low percentage gel. The neutral pH buffer improves the stability of gel resulting in a longer shelf life than the gel with Laemmli buffer system.

Comparison of Separation



Ordering Information

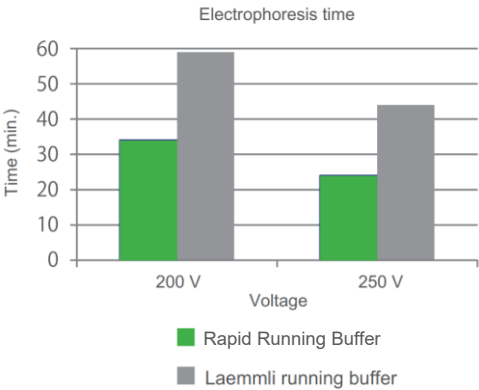
Product Name	Cat. No.	PKG size	Price
WIDE RANGE Gel Preparation Buffer (4x) for PAGE	07831-94	250 ml	\$ 103.00

Rapid Running Buffer Solution (20x)

Features

- Fast Run Time: Running mini-gel in 25 minutes.
- Easy to Use: Premixed (20x) buffer just replace the Laemmli running buffer with Rapid Running buffer
- Wide-Range Separation: Gradient gel-like separation on a single percentage gel

Comparison of electrophoresis time



Ordering Information

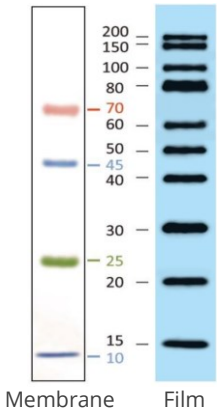
Product Name	Cat. No.	PKG size	Price
Rapid Running Buffer Solution (20x)	12981-74	250 ml	\$ 58.00

Protein Ladder

CosmoPAGE WB Ladder

Features

- 4 prestained proteins for clear visualization during electrophoresis and Western blotting transfer
- 10 IgG-binding proteins for visualization on Western blots
- Wide range size estimation (10-200 kDa)
- Two enhanced bands (30 and 80 kDa)

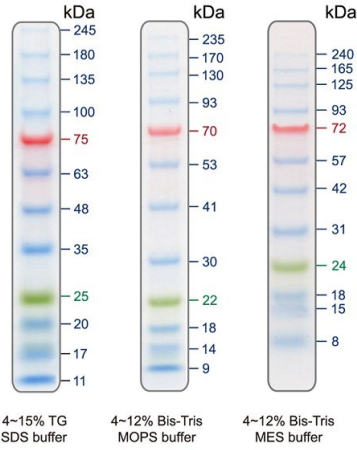


Ordering Information

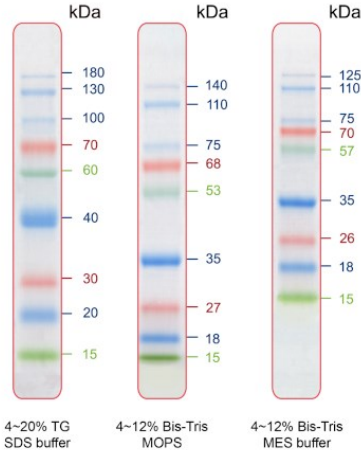
Product Name	Cat. No.	PKG size	Price
CosmoPAGE WB Ladder	NU01008	250 µl	\$ 160.00

Prestained / Unstained Protein Ladder

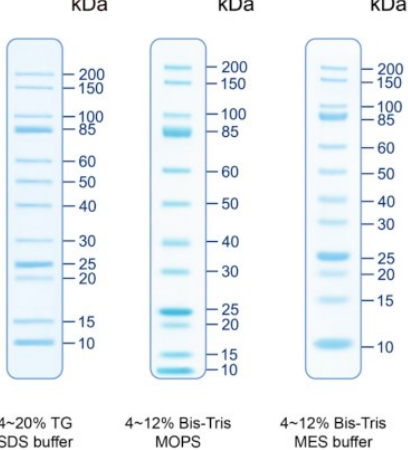
Cat. No.: NU01002
Prestained Protein Ladder,
Broad Range (10-245 kDa)



Cat. No.: NU01009
Prestained Protein Ladder,
Mid Range (15-180 kDa)



Cat. No.: NU01010
Unstained Protein Ladder,
Broad Range (10-200 kDa)



Ordering Information

Product Name	Cat. No.	PKG size	Price
Prestained Protein Ladder, Broad Range	NU01002	500 µl	\$ 100.00
Prestained Protein Ladder, Mid Range	NU01009	500 µl	\$ 100.00
Unstained Protein Ladder, Broad Range	NU01010	500 µl	\$ 100.00

CosmoPAGE WB Ladder

Prestained Protein Ladder

Unstained Protein Ladder




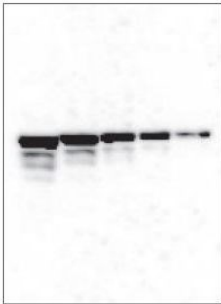

Blocking Reagents

Bullet Blocking One

Features

- Fast blocking in 5 min.
- Ready-to-use

Comparison Data

Blocking Reagents	Bullet Blocking One	Blocking One	5% Skim Milk
Blocking Time	5 min.	30 min.	60 min.
Blotting Image			

* Blocking One is our standard blocking reagent.

(Conditions)

Blotting:	Semi-dry Blotting Buffer Solution (Cat. No.: 30650) at 10 V for 30 min
Washing:	0.1% t-TBS (Cat. No.: 12750)
Blocking:	Refer to the figure above
1st antibody:	Anti-Vimentin (C-20) (Rabbit) (Cat. No.: SC-7557-R) diluted 1:2,000, 1 hr. at RT
2nd antibody:	Anti-Rabbit IgG-HRP (Cat. No.: SC-2004) diluted 1:100,000, 1 hr. at RT
Detection:	Chemi-Lumi One (Cat. No.: 11644), 5 min. reaction time
Detector:	LAS-3000 (High mode), 15 min. exposure time
Sample:	20 µg of HeLa cell extract, 5 serial two-fold dilution series

Ordering Information

Product Name	Cat. No.	PKG size	Price
Bullet Blocking One for Western Blotting (#13779-56 x 4 bottles)	13779-14	200 ml	\$ 63.00
Bullet Blocking One for Western Blotting	13779-01	1 L	\$ 189.00

Related Products

Product Name	Cat. No.	PKG size	Price
Blocking One	03953-66	100 ml	\$ 42.00
	03953-95	500 ml	\$ 63.00
Blocking One-P for Immunoassays with Phospho-specific Antibodies	05999-84	200 ml	\$ 52.00



Antibody Diluent

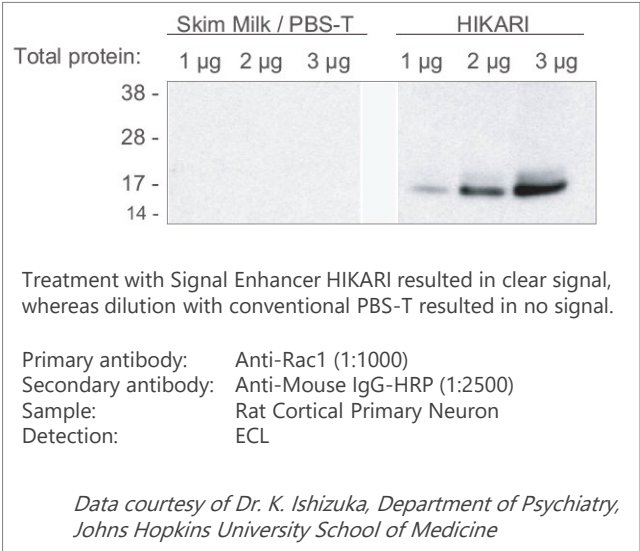
Signal Enhancer HIKARI

Dilute your antibodies with Signal Enhancer HIKARI instead of conventional diluents such as PBS-t or TBS-t before performing your next western blotting detection protocol and witness a remarkable increase in the ability to detect the protein of interest and to eliminate undesired background. Signal Enhancer HIKARI was developed to resolve the problems of low sensitivity and high background often encountered during procedures such as Western blotting and ELISA.

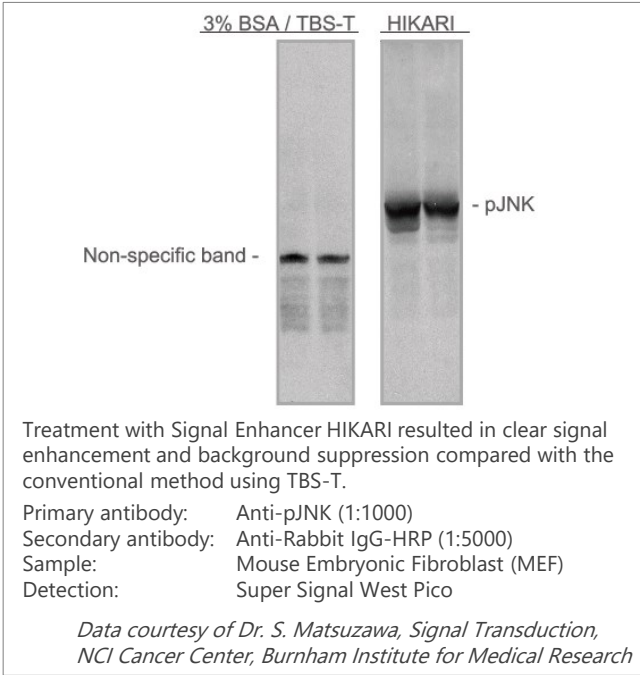
Features

- Enhances antigen-antibody reactions
- Removes background
- Works with any substate
- Works with any membrane
- Ready-to-use reagent
- yield several 10-fold increase in signal intensity
- improve the specificity of your antibodies
- enhances chemiluminescence, colorimetric and fluorescence detection system
- enhances signal from nitrocellulose and PVDF membrane
- just dilute your antibodies with Signal Enhancer HIKARI

Detection Enhancement of Rac1



Detection Enhancement of p-JNK



Ordering Information

Product Name	Cat. No.	PKG size	Price
Signal Enhancer HIKARI 50 (Solution 1* 50 ml, Solution 2** 50 ml)	NU00101	1 kit	\$ 98.00
Signal Enhancer HIKARI 250 (Solution 1* 250 ml, Solution 2** 250 ml)	NU00102	1 kit	\$ 298.00
Signal Enhancer HIKARI - Solution 1	NU00102-1	250 ml	\$ 179.00
Signal Enhancer HIKARI - Solution 2	NU00102-2	250 ml	\$ 179.00



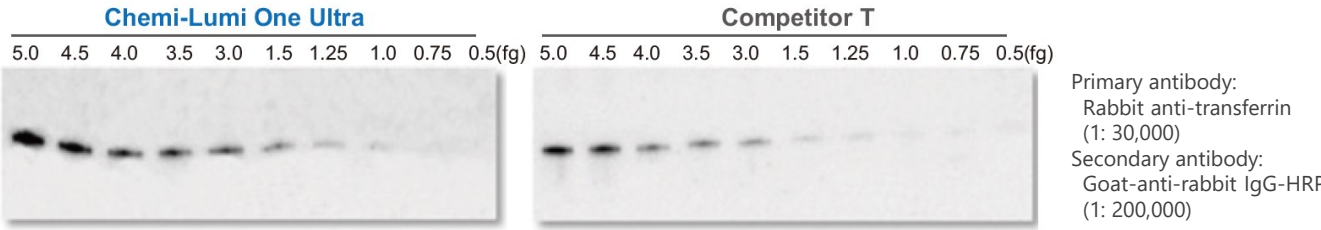
Chemiluminescent HRP Substrates

Chemi-Lumi One Series

Chemi-Lumi One is a series of highly sensitive luminol-based chemiluminescence assay kits for Western Blotting. Three types of chemiluminescent substrates are available for Western blot detection with horseradish peroxidase enzyme (HRP).

Product Name	Chemi-Lumi One L	Chemi-Lumi One Super	Chemi-Lumi One Ultra
Product No.	07880	02230	11644
Lower Detection Limit	Low-picogram	Mid-femtogram	Low-femtogram
Required Working Solution	Approx. 0.125 ml / cm ²	Approx. 0.1 ml / cm ²	Approx. 0.1 ml / cm ²
Suggested Antibody Dilution Ratio	Primary: 1:1,000-1:5,000 Secondary: 1:20,000-1:100,000	Primary: 1:1,000-1:20,000 Secondary: 1:20,000-1:200,000	Primary: 1:5,000-1:100,000 Secondary: 1:100,000-1:500,000
Reaction Period	1 min.	1 min.	5 min.
Comparable to	ECL SuperSignal Pico	ECL Prime SuperSignal Dura	ECL Select SuperSignal Femto
Sensitivity	<div><div>General Use</div><div>High Sensitivity</div><div>Ultra high Sensitivity</div></div> <div><div>Conc. of IgG HRP-linked</div><div>900 300 100 33.3 11.1 3.7 1.2 412 137 46 15 3</div><div><div>Chemi-Lumi One L</div><div>Chemi-Lumi One Super</div><div>Chemi-Lumi One Ultra</div></div></div>		
<Condition>	Antigen: Anti-Mouse IgG (Goat), HRP Conjugated (Santa Cruz, sc-2005)		
Detection:	L (1 min.) Super (1 min.) Ultra (5 min.)		
Detector:	LAS-3000 Super mode (Analyze 3 min. later after reaction with each substrate)		
Ex. time:	30 min.		

Chemi-Lumi One Ultra



Ordering Information

Product Name	Cat. No.	Quantity	PKG Size	Price
Chemi-Lumi One L (Luminol 50 mL, Peroxide 50 mL)	07880-54	800 cm ²	1 Kit	\$ 84.00
Chemi-Lumi One L (Luminol 250 mL, Peroxide 250 mL)	07880-70	4,000 cm ²	1 Kit	\$ 200.00
Chemi-Lumi One Super (Luminol 10 mL, Peroxide 10 mL)	02230-14	200 cm ²	1 Kit	\$ 84.00
Chemi-Lumi One Super (Luminol 50 mL, Peroxide 50 mL)	02230-30	1,000 cm ²	1 Kit	\$ 210.00
Chemi-Lumi One Ultra (Luminol 10 mL, Peroxide 10 mL)	11644-24	200 cm ²	1 Kit	\$ 116.00
Chemi-Lumi One Ultra (Luminol 50 mL, Peroxide 50 mL)	11644-40	1,000 cm ²	1 Kit	\$ 328.00

Chemi-Lumi One L



Chemi-Lumi One Super



Chemi-Lumi One Ultra



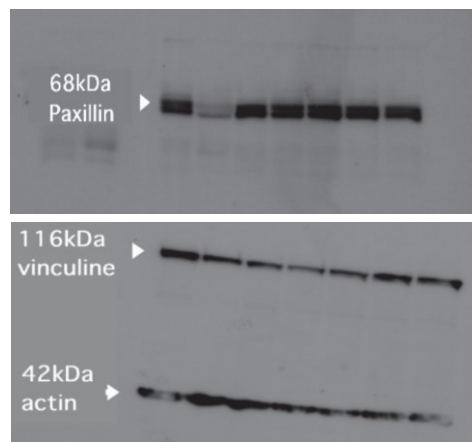
Stripping and Reprobing

WB Stripping Solution

Features

- No heating
- No odor
- Fast
- Ready-to-use
- Reaction at room temperature
- Does not contain 2-mercaptoethanol
- Stripping time 5-15 minutes
- One solution in one bottle

Applications



First antigen-antibody reaction

Blocking: Blocking One (Cat. No.: 03953-95), 30 min
Wash: t-Tris Buffered Saline
Primary antibody: Anti-Paxillin (mouse IgG)
Secondary antibody: Anti-mouse IgG-POD
Detection: Chemiluminescence Detection Kit (commercially available product)

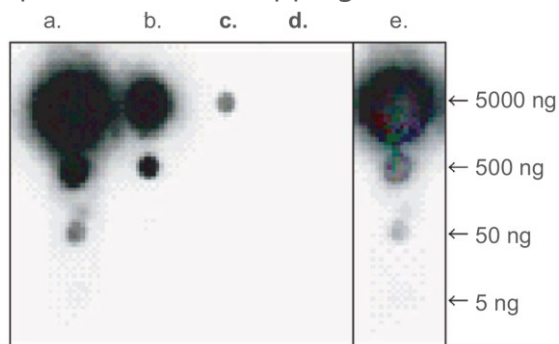
Stripping

RT, 15 min. for conventional protocol

Second, different antigen-antibody reaction

Blocking: Blocking One (Cat. No.: 03953-95), 30 min
Wash: t-Tris Buffered Saline
Primary antibody: Anti-Vinculin (mouse IgG) / Anti-Actin (mouse IgG)
Secondary antibody: Anti-mouse IgG-POD
Detection: Chemi-Lumi One

Comparison of WB Stripping Solution and WB Stripping Solution Strong



Apply HPR-labeled anti-GST antibody to 5000 ng, 500 ng, 50 ng, or 5 ng (as desired) of c-Myc-GST antigen on a PVDF membrane, then remove the antibody by agitating gently for 10 minutes using one of the following stripping solutions.

a: 0.05%(v/v) t-TBS
b: 2%(w/v) SDS, 100mM 2-Mercaptoethanol
c: WB Stripping Solution
d: WB Stripping Solution Strong

After stripping the antibodies and washing the membrane with t-PBS for 2 min, use the chemiluminescence method to detect the HPR-labeled anti-GST antibody remaining on the membrane.

*Image "e" is a result that shows detection of the antigen with HPR-labeled anti-GST antibody on the "d". The similar result is marked with "a". Therefore, WB Stripping Solution Strong only stripped antibodies, not antigens.

Ordering Information

Product Name	Cat. No.	PKG size	Price
WB Stripping Solution	05364-55	500 ml	\$ 98.00
WB Stripping Solution Strong	05677-65	500 ml	\$ 180.00
WB Stripping Solution Trial Set (WB Stripping Solution + WB Stripping Solution Strong)	05680-21	40 ml each	\$ 30.00

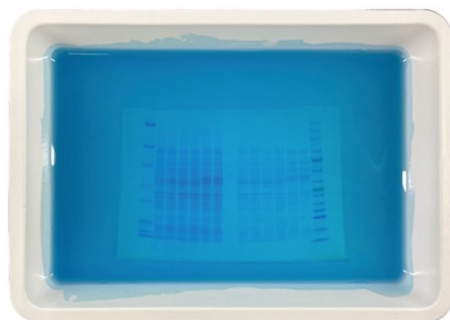
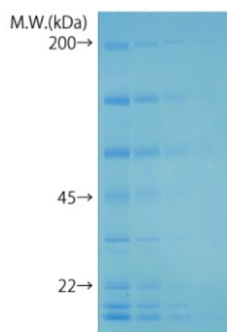


One-step Gel Staining Reagent

CosmoPAGE Bullet CBB

Features

- Fast Staining – One-step staining in 15 minutes.
- Easy to Use – No need for pretreatment, washing, destaining or microwaving.
- Safe Use – No harmful methanol or acetic acid is contained.



(Left)
15-min staining / No destaining

(Right)
Staining pattern in the CosmoPAGE Bullet CBB



Ordering Information

Product Name	Cat. No.	PKG size	Price
CosmoPAGE Bullet CBB	NU01003	500 ml	\$ 98.00

Staining His-tagged Fusion Proteins

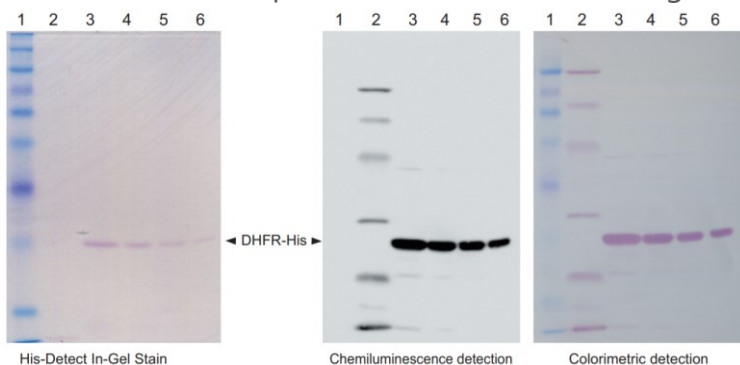
His-Detect In-Gel Stain

Features

- Stain His-tagged fusion proteins directly in gels without western blotting
- Detect picomolar level of His-tagged fusion proteins within an hour
- No fluorescent image analyzer or transilluminator required



Application Data : Comparison with western blotting



Western blotting:
Primary antibody: Anti-6xHis (Cat. No.: 04428)
Secondary antibody: Anti-Mouse IgG-HRP (Goat)
(SantaCruz, Cat. No.: SC-2005)

Chemiluminescence detection:
Chemi-Lumi One L (Cat. No.: 07880)

Colorimetric detection:
Peroxidase Stain Kit (Cat. No.: 26652)

* For detection of Protein Markers (Biotinylated),
Streptavidin Horseradish Peroxidase Conjugate
(Cat. No.: 02517) is used.

Ordering Information

Product Name	Cat. No.	PKG size	Price
His-Detect In-Gel Stain	08500-94	100 ml	\$ 50.00
	08500-65	500 ml	\$ 189.00

Cell Lysis Solution

RIPA Buffer

RIPA Buffer (10x) is a ready-to-use solution containing a variety of surfactants and protease inhibitors (Cat. No.: 08714-04). Proteins lysed with RIPA Buffer can be used in western blotting, ELISA or immunoprecipitation testing regimes.

Features

- Contains protease inhibitors (Cat. No.: 08714-04)
- Unmixes SDS solution for immunoprecipitation (Cat. No.: 08714-04)
- Applicable BCA protein assay without buffer exchange



Product Name	RIPA Buffer (1x, ready-to-use)	RIPA Buffer (10x)
Protease Inhibitor Cocktail	without	with
Composition	<ul style="list-style-type: none">- 50mmol/l Tris-HCl buffer (pH7.6)- 150mmol/l NaCl- 1% Nonidet® P40- 0.5% Sodium Deoxycholate- 0.1% SDS	【1x solution with SDS】 <ul style="list-style-type: none">- 50mmol/l Tris-HCl buffer (pH7.6)- 150mmol/l NaCl- 1% Nonidet® P40- 0.5% Sodium Deoxycholate- Protease Inhibitor Cocktail (1x)- (0.1% SDS)
Volume/Content	100 mL	<ul style="list-style-type: none">- RIPA Buffer (10x) : 2ml×5本- SDS Solution (1% SDS) : 2ml×5本

Ordering Information

Product Name	Cat. No.	PKG size	Price
RIPA Buffer (10X)	08714-04	1 set	\$ 136.00
RIPA Buffer	16488-34	100 ml	\$ 97.00

Inhibitor Cocktails

Ordering Information

Product Name	Cat. No.	PKG size	Price
Protease Inhibitor Cocktail Tablets, EDTA-Free	NU01069	20 tablets	\$ 325.00
Protease Inhibitor Cocktail for Use with Mammalian Cell and Tissue Extracts (100x) DMSO Solution	25955-24	1 ml	\$ 63.00
	25955-11	5 x 1 ml	\$ 208.00
Phosphatase Inhibitor Cocktail	07574-61	1 ml	\$ 136.00
Phosphatase Inhibitor Cocktail (EDTA free) (100X)	07575-51	1 ml	\$ 136.00

RIPA Buffer



Protease Inhibitor Cocktail. Tablets



Protease Inhibitor Cocktail



Phosphatase Inhibitor Cocktail



TurboTEV Protease & Turbo3C Protease

Features

- Activity over a broad temperature (4°C to 37°C) and pH (6.5 to 8.5) range
- Both GST and His tags to facilitate its removal from the digested protein sample

Ordering Information

Product Name	Cat. No.	PKG size	Price
TurboTEV (TEV Protease) 2 mg/ml	NU0102S	1,000 units (0.1 mg)	\$ 67.00
	NU0102M	10,000 units (1 mg)	\$ 480.00
	NU0102L	100,000 units (10 mg)	\$ 4,077.00
TurboTEV (TEV Protease), HC 10 mg/ml	NU0112L	1 x 10 mg	\$ 4,077.00
Turbo3C (HRV3C Protease) 2 mg/ml	NU0101P	100 units (0.1 mg)	\$ 42.00
	NU010S	1,000 units (1 mg)	\$ 338.00
	NU0101M	10,000 units (10 mg)	\$ 2,803.00

TurboTEV (TEV Protease)



Turbo3C (HRV3C Protease)



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