User Guide

mPAGE®
Bis-Tris Precast SDS-PAGE Gels

This product is for research use only.

SigmaAldrich.com

Millipore®

Contents

Introduction

The mPAGE® Bis-Tris SDS-PAGE Gel system offers high performance, optimal electrophoretic separation, and better resolution over a wide range of molecular weights. The Bis-Tris SDS-PAGE system helps preserve protein integrity and extends the shelf life of the mPAGE® Bis-Tris Precast Gel. mPAGE® Bis-Tris Precast Gels have a versatile design that allows for larger sample loading volumes. The 10 cm x 8 cm mini cassette format makes mPAGE® Bis-Tris Precast Gels compatible with our mPAGE® Mini Gel Tank and most popular gel electrophoresis equipment.

mPAGE® Mini Gel Tank

mPAGE® Bis-Tris Precast Gels are designed to work exclusively with MOPS or MES running buffer. Depending on which running buffer is used, very distinct separation patterns can be achieved. MOPS buffer can be used to fine tune the separation of large and medium-sized proteins, whereas MES buffer provides optimal separation of smaller proteins. Refer to the migration charts (See Protein Separation on page 4) to determine which gel running buffer system is best suited for the intended separation range.

The mPAGE® Bis-Tris Precast SDS-PAGE Gel System includes a specially formulated transfer buffer optimized for transferring proteins from mPAGE® Bis-Tris Precast Gels to PVDF or nitrocellulose blotting membranes.

Storage and Stability

mPAGE® gels feature an extended shelf-life of up to 18 months from the date of manufacture when stored at 2–8 °C.

Components

mPAGE® Bis-Tris Precast Gels

mPAGE® Bis-Tris Precast Gels are available as 4-12%, 4-20%, and 8-16% gradients and 8%, 10%, and 12% homogeneous compositions. mPAGE® Bis-Tris Precast Gels are provided as 10-well, 12-well, and 15-well formats, allowing for sample volumes of 80, 60, and 40 µL, respectively.

mPAGE® 4X LDS Sample Buffer

mPAGE® 4X LDS Sample Buffer is formulated to complement mPAGE® Bis-Tris Precast Gels and running buffer systems. The combination will achieve optimal band resolution and sharpness without causing sample degradation. The sample buffer is used for sample preparation prior to denaturing polyacrylamide gel electrophoresis. mPAGE® 4X LDS Sample Buffer contains lithium dodecyl sulfate (LDS) at pH 8.4, to ensure optimal protein separation. Reduction of disulfide bonds can be performed at 70 °C using dithiothreitol (DTT) or β-mercaptoethanol (BME).

mPAGE® MES SDS or MOPS SDS Running Buffer Powder

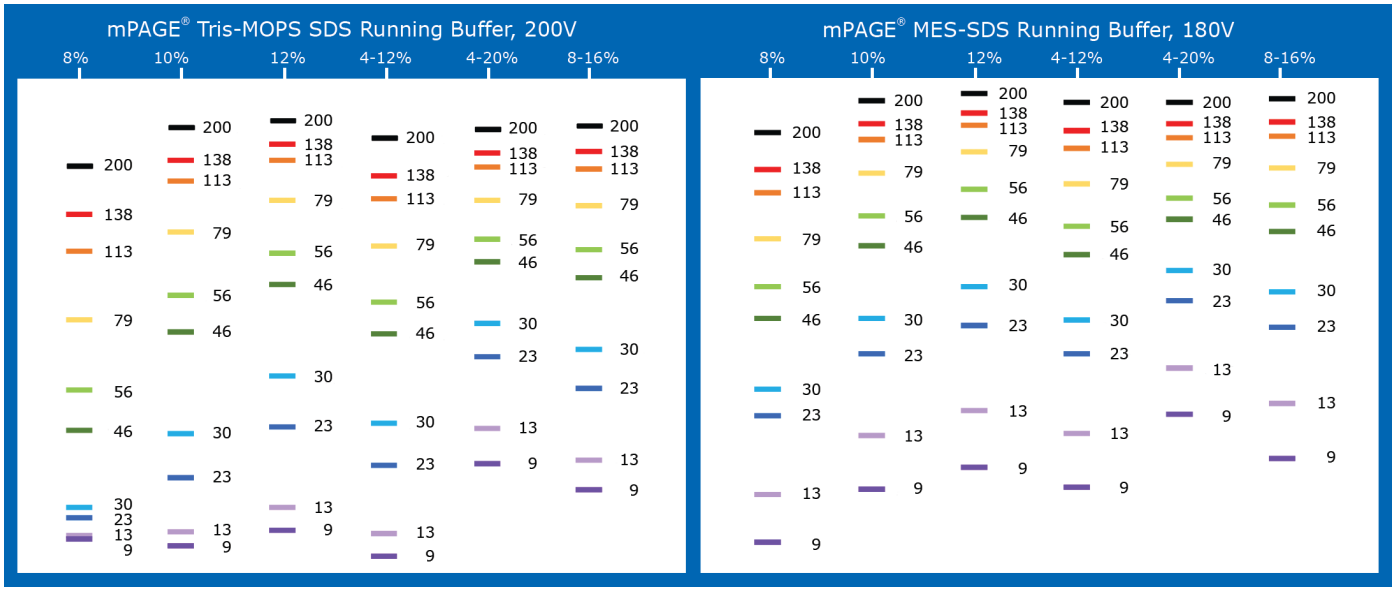
Running buffers are optimized for use with the mPAGE® Bis-Tris Precast Gels. Ready to dissolve premeasured reagent packets make buffer preparation quick and easy. Each packet makes 1L of 1X buffer when dissolved in deionized water.

mPAGE® Transfer Buffer Powder

mPAGE® Transfer Buffer is formulated for best transfer efficiency of proteins from mPAGE® Bis-Tris Precast Gels to PVDF or nitrocellulose blotting membranes. The transfer buffer is provided as an easy to dissolve powder in premeasured packets. Upon reconstitution with 10% methanol, each packet yields 1L of 1X mPAGE® Transfer Buffer. Review Semi-dry Transfer Guidelines on page 9 for preparation of semi-dry transfer buffers.

Protein Separation

Migration Charts with Unstained Protein Standard



Instructions for Using mPAGE® Bis-Tris Precast Gels

For optimal results only use mPAGE® formulated buffers and reagents when preparing and running samples with mPAGE® Bis-Tris Precast Gels.

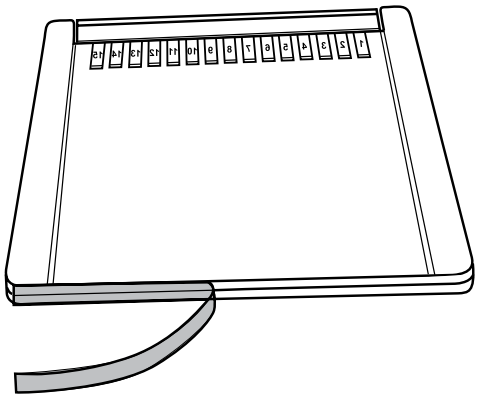
CAUTION: Do not use Tris-glycine SDS running buffer with mPAGE® Bis-Tris Precast Gels.

Running Buffer Preparation

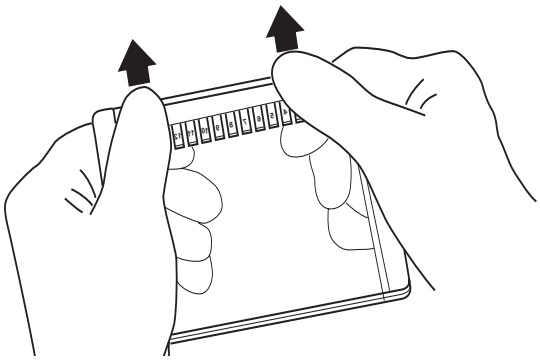
For best results, it is recommended to prepare fresh 1X buffer for every run. To prepare 1L of 1X running buffer, simply dissolve one packet of running buffer powder in 1L of deionized water.

mPAGE® Bis-Tris Precast Gel Preparation

1. Remove mPAGE® Bis-Tris Precast Gel from the package, then peel off the sealing tape at the bottom of the gel cassette.



2. Gently remove the comb from the gel cassette.



3. Choose an electrophoresis tank and insert the gel cassette. See Electrophoresis Tank Compatibility on page 5 for guidance.
4. Fill the buffer core with 1X running buffer to check for a proper seal prior to filling the anode (outer) chamber to the recommended level.

Electrophoresis Tank Compatibility

mPAGE® Mini Gel Tank

mPAGE® Precast Gels are compatible with the mPAGE® Mini Gel Tank. The electrode core gasket of the mPAGE® Mini Gel Tank has two distinct orientations to accommodate a variety of gel formats. Simply remove the gasket from it's groove on the electrode core, flip it over and put it back in the groove. For mPAGE® Bis-Tris Precast Gels, the electrode core gasket must be oriented with its flat side facing out. When running an uneven number of mPAGE® Bis-Tris Precast Gels a buffer dam must be used opposite the single precast gel. Users have the choice of two buffer dams:

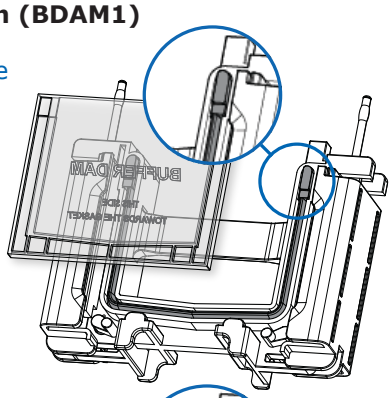
- Buffer Dam (BDAM1) is supplied with the mPAGE® Mini Gel Tank
- mPAGE® Precast Gel Buffer Dam (MPBD) is an accessory for the mPAGE® Bis-Tris Precast Gels.

When using the buffer dam provided with the mPAGE® Mini Gel Tank (BDAM1) the electrode core gasket on the precast gel side must be oriented with the flat side facing the gel. On the side that will hold the Buffer Dam, the notched side of the gasket must be facing the buffer dam to form a proper seal.

Electrode Core Gasket Orientation for Buffer Dam (BDAM1)

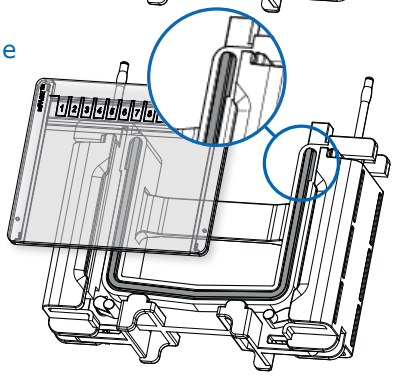
Buffer Dam Side

Notched side of gasket visible



Precast Gel Side

Flat side of gasket visible

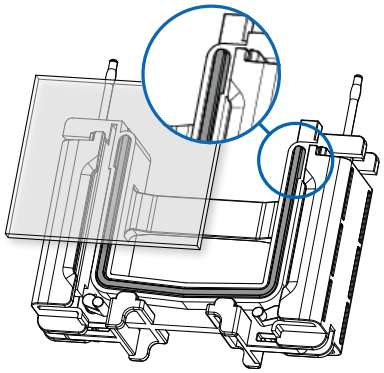


CAUTION: The flat side of the electrode core gasket must be facing the mPAGE® Precast Gels short plate. Refer to instruction for gasket orientation when using specific buffer dams.

Electrode Core Gasket Orientation for Buffer Dam (MBPD)

The mPAGE® Precast Gel Buffer Dam (MPBD) can be used when running an uneven number of mPAGE® Bis-Tris Precast Gels in the mPAGE® Mini Gel Tank. In this configuration, the flat side of the electrode core gasket should face outward on the buffer dam and precast gel side to seal the electrode core.

Flat side of gasket visible on both sides



Other Suitable Tanks

mPAGE® Bis-Tris Precast Gels can also be run on Bio-Rad Mini-PROTEAN® II or 3 Electrophoresis Tank, or a Bio-Rad Mini-PROTEAN® Tetra System. To use these electrophoresis tanks, follow the electrode core gasket orientation outlined for the mPAGE® Mini Gel Tank.

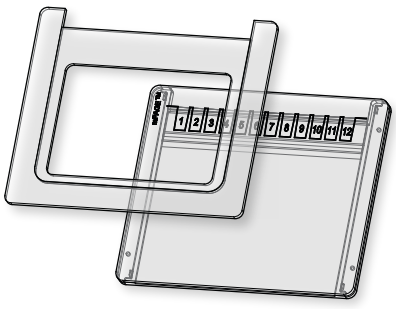
Adapter Plates

Electrophoresis tanks (listed below) are compatible when used with an mPAGE® Adapter Plate:

- Sigma-Aldrich® Dual Run and Blot System
- LONZA PAGEr® Minigel Chamber
- Thermo XCell I and II
- Surelock™ Mini-Cell

The gel cassette short plate should always be against the buffer core gasket to prevent leaks. Use one adapter per gel. Position the adapters against the tall plate of the gel cassette before assembling gel tank.

Adapter → Tall Plate → Short Plate → Buffer Core Gasket



Sample Preparation and Gel Loading

1. Samples should be prepared just prior to electrophoresis.

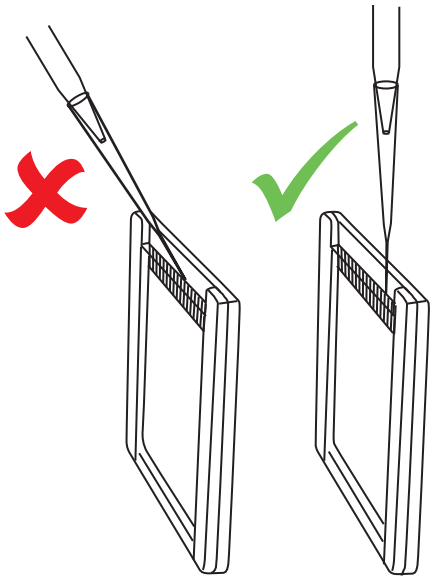
Preparation of Electrophoresis Samples

Reagent	Reduced Sample	Non-reduced Sample
Protein Sample	X	X
mPAGE® 4X Sample Buffer	2.5 µL	2.5 µL
1M-DTT*	1 µL	N/A
Deionized Water	6.5-X µL	7.5-X µL
Total Volume	10 µL	10 µL

* DDT or β-mercaptoethanol (BME) can be used as a reducing agent (DTT to a final concentration of 100 mM or add BME to a final concentration of 2.5%). **Note**: Do not store reduced samples for >2 hours as they may reoxidize.

2. Heat samples for 10 minutes at 70 °C (Do not boil samples). Centrifuge samples prior to loading.
3. Gel wells are reinforced with a line of gel, to load samples into wells, vertically insert tip for optimal sample loading results. Do not exceed well capacity when loading samples:

   80 µL for 10-well gels
   60 µL for 12-well gels
   40 µL for 15-well gels



Running the Gel

1. Once the samples are loaded and buffer chambers are filled with running buffer, place the cover onto the electrophoresis tank and plug the electrical leads into the power supply.

CAUTION: Do not use Tris-glycine SDS running buffer with mPAGE® Bis-Tris Precast Gels.

2. Run the gel at constant voltage until the dye front reaches 2 mm from the bottom of the gel cassette. Run time can vary depending on the gel percentage, running buffer, and equipment used. Refer to the table below for optimal voltage and typical run times best suited for the chosen gel and running buffer.

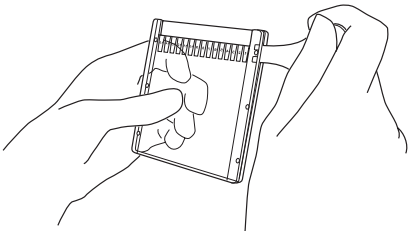
   When running more than one gel per electrophoresis tank, all gels should be of the same composition.

Typical Amperage and Run Times

	mPAGE® MES SDS Running Buffer 180 V		mPAGE® MOPS SDS Running Buffer 200 V	
Acrylamide	Amperage (Start-End)	Run Time Minutes	Amperage (Start-End)	Run Time Minutes
8%	133-72 mA	21	140-58 mA	26
10%	131-69 mA	22	138-56 mA	27
12%	133-66 mA	29	133-52 mA	32
4-12%	133-71 mA	23	136-54 mA	29
4-20%	120-59 mA	36	121-44 mA	35
8-16%	126-63 mA	29	129-49 mA	30

Removing the Gel from the Cassette

Once electrophoresis is finished, remove the gel cassette from the gel tank. Insert the mPAGE® Gel Cassette Opener into the gap between the two plates at one of the three contact points along each side of the cassette. Repeat for all six contact points of the cassette until the two plates are separated.



Gel Staining

mPAGE® Bis-Tris Precast Gels are compatible with popular gel staining protocols. When using commercially available staining reagents, follow the manufacturer's instructions.

CAUTION: Some commercially available stains may require a fixing step for Bis-Tris gels. Follow the manufacturers instructions for these products or use ReadyBlue® Protein Gel Stain.

Western Blotting

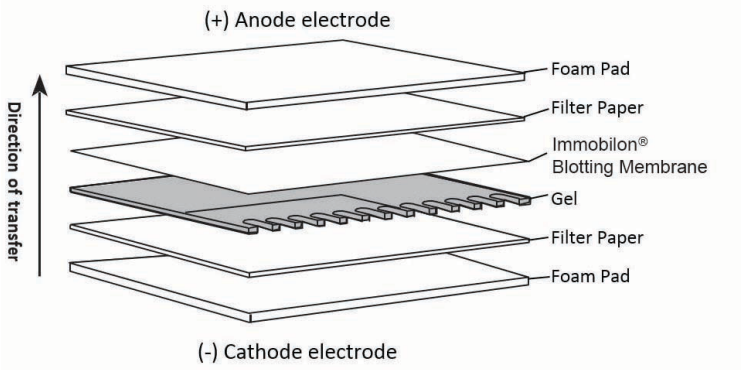
Gels perform best when using mPAGE® Transfer Buffer for wet as well as semi-dry transfer (see special preparation instructions in Semi-dry Transfer Guidelines on page 9).

Blotting Membrane Activation

- If using PVDF blotting membranes such as Immobilon®-FL or PSQ, activate the membrane with 70% methanol, ethanol or isopropyl alcohol. Rinse membranes in deionized water to remove residual solvent prior to incubating in mPAGE® Transfer Buffer containing 10% methanol. Incubate blotting membranes for a minimum of 5 minutes.
- If using nitrocellulose or Immobilon®-E blotting membranes, add mPAGE® Transfer Buffer containing 10% methanol to an appropriately sized container and gently float membrane on the transfer buffer to avoid air locking. Incubate for a minimum of 5 minutes.

Wet Transfer Guidelines

mPAGE® Bis-Tris Precast Gels are compatible with many wet transfer systems. Please review the specific manufacturer's setup instructions for buffer volumes and transfer conditions.



1. Prepare 1X mPAGE® Transfer Buffer solution containing 10% methanol by mixing reagents:
   - Methanol: 100 mL
   - Deionized Water: 900 mL
   - mPAGE® Transfer Buffer Powder: 1 packet
2. For each gel to be transferred, wet two pieces of filter paper in mPAGE® Transfer Buffer containing 10% methanol.
   Note: Wet transfer stacks are typically assembled on the cathode portion of the blot module. In most cases, fiber pads are used to assure the gel and membrane stay in contact at all time during the transfer process. Refer to blot module user guide for the exact number of fiber pads to be used.
3. Submerge fiber pads in mPAGE® Transfer Buffer containing 10% methanol and remove air bubbles. Place the appropriate number of pads onto the blot module cathode plate.
4. Open the gel cassette. (See Removing the Gel from the Cassette on page 7). To maintain consistent orientation, carefully remove the short plate, allowing the gel to remain on the tall plate. Remove the stacker by cutting 5 mm below the well bottom.
5. Place one prewetted piece of filter paper on top of the gel. Using a roller or serological pipette, remove any air bubbles.
6. Turn the tall plate over, holding over the removed short plate (or gloved hand), carefully separate the gel from the tall plate.
7. Transfer the gel/filter paper assembly onto the fiber pad with the gel facing up and the filter paper contacting the fiber pads. Add a small amount of mPAGE® Transfer Buffer on the gel before placing the blotting membrane. Using a roller or serological pipette, remove any air bubbles between gel and membrane.
8. Place a second piece of prewetted filter paper on top of the membrane. Using a roller or serological pipette, remove any air bubbles.
9. Place an additional fiber pad(s) on top of the filter paper. Close the assembly and place into the electrophoresis tank. Due to differences in transfer systems refer to blot module user guide for further instructions.
10. Connect tank to a power supply and transfer as outlined in the blot module instructions. Depending on molecular weight of the protein of interest, further optimization of transfer time may be required.
    See Table 3 for examples of typical transfer times for popular wet transfer systems.

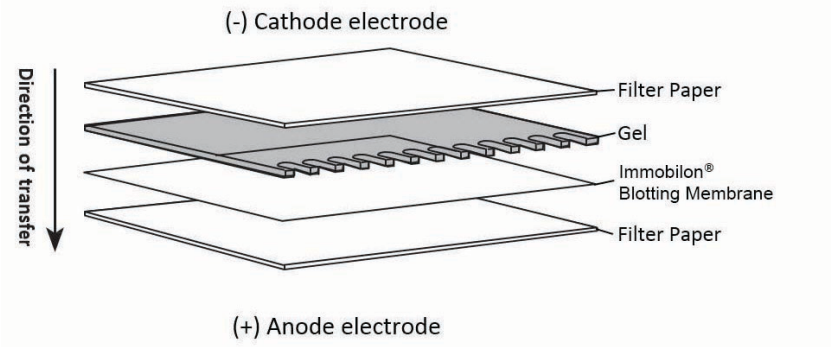
Popular Wet Transfer Systems

Electrophoresis Tank	Blot Module	Typical Transfer Condition
mPAGE® Mini Gel Tank	mPAGE® Wet Transfer Module	100 V/1 Hour
mini-PROTEAN® Tetra Cell	Tetra Blotting Module	100 V/1 Hour
XCell Surelock™	XCell II Blot Module	30 V/1 Hour

11. Remove the blot from the blot module and rinse the membrane in deionized water to remove transfer buffer and residual gel debris.
12. To visualize the transferred proteins prior to immunodetection, the membrane may be stained with any reversible blot stain compatible with immunodetection. Follow the reagent manufacturer's staining protocol.
13. The blot may be dried or used immediately in a desired immunodetection protocol.

Semi-dry Transfer Guidelines

This protocol was developed on a semi-dry transfer cell; some systems may require further optimization.



1. Prepare 10X mPAGE® Transfer Buffer stock solution by dissolving 1 packet of mPAGE® Transfer Buffer in 100 mL deionized water.
2. Prepare 100 mL 2X mPAGE® Transfer Buffer containing 10% methanol:
   - Methanol: 10 mL
   - Deionized Water: 70mL
   - 10X mPAGE® Transfer Buffer Stock Solution: 20mL

   Note: If transferring high molecular weight proteins, buffer may be supplemented with 0.025-0.05% SDS.
3. Prepare 100 mL mPAGE® gel equilibration buffer containing no methanol:
   - Deionized Water: 80mL
   - 10X mPAGE® Transfer Buffer Stock Solution: 20 mL

   Note: If transferring high molecular weight proteins, buffer may be supplemented with 0.025-0.05% SDS.
4. Soak two pieces of extra thick filter paper (or eight (8) pieces of Immobilon® Blotting Filter Paper, 7 cm x 8.4 cm sheet (IBFP0785C)) in 2X mPAGE® Transfer Buffer containing 10% methanol for each gel to be transferred.

   Note: review semi dry transfer equipment user-guide for number of filter paper sheets and thickness to be used
5. Open gel cassette. (See Removing the Gel from the Cassette on page 7). For best transfer performance, the stacker of mPAGE® Bis-Tris Precast Gels must be removed by cutting 5 mm below the well bottom before performing semi-dry transfer.
6. Immerse the gel in the mPAGE® gel equilibration buffer containing no methanol and incubate while shaking for no longer than 5 minutes.
7. Assemble the transfer stack on the semi-dry transfer system's anode plate:
   a. Place a piece of extra thick filter paper (or four (4) sheets of Immobilon® Blotting Filter Paper, 7 cm x 8.4 cm sheet) prewetted with 2X mPAGE® Transfer Buffer containing 10% methanol onto the anode plate. Using a roller or a serological pipette, remove air bubbles between the anode plate and filter paper.
   b. Place the blotting membrane prewetted with 2X mPAGE® Transfer Buffer containing 10% methanol on top of the blotting paper. Using a roller or a serological pipette, remove air bubbles.
   c. Remove gel from the equilibration buffer and place on top of the blotting membrane. Using a roller or a serological pipette, gently remove air bubbles between gel and membrane.
   d. Place the remaining extra thick filter paper (or four sheets of Immobilon® Blotting Filter Paper, 7 cm x 8.4 cm sheet) prewetted with 2X mPAGE® Transfer Buffer containing 10% methanol on top of the gel. Using a roller or a serological pipette, remove air bubbles.
8. Place the cathode plate and or blotter lid onto the assembled blot sandwich (refer to Semi-dry Transfer System user guide).
9. mPAGE® Bis-Tris Precast Gels are transferred at 25 volts for 30-45 minutes depending on the molecular weight of the proteins to be transferred. High molecular weight proteins may require extra transfer time.
10. Connect blotter leads to a power supply that is rated for the current being generated. Typically, a high current power supply is required for semi-dry blotting. One mPAGE® Bis-Tris Precast Gel generates an initial amperage up to 900 mA.
11. Remove the blot from the transfer system and briefly rinse the membrane in deionized water to remove gel debris.
12. To visualize the transferred proteins prior to immunodetection, the membrane may be stained with any reversible blot stain compatible with immunodetection. Follow the reagent manufacturer's staining protocol.
13. The blot may be dried or used immediately in a desired immunodetection protocol.

Buffer Formulations

mPAGE® 4X LDS Sample Buffer

Reagent	Amount
Tris-HCl	0.666 g
Tris-Base	0.682 g
Lithium dodecyl sulfate (LDS)	0.800 g
EDTA	0.006 g
Glycerol	4 g
Coomassie® Brilliant Blue G250 (1% solution)	0.75 ml
Phenol Red (1% solution)	0.25 ml
Deionized water	To 10 ml

Store at 2–8 °C. The 1X solution is pH 8.5.
Do not adjust the pH with acid or base.

mPAGE® MES SDS Running Buffer

Reagent	Amount
Tris-Base	6.06 g
MES	9.76 g
SDS	1.0 g
EDTA	0.3 g
Deionized water	1000 mL

mPAGE® MOPS SDS Running Buffer

Reagent	Amount
Tris-Base	6.06 g
MOPS	10.46 g
SDS	1.0 g
EDTA	0.3 g
Deionized water	1000 mL

mPAGE® 1X Transfer Buffer pH 8.2 for Wet Transfer protocol

Reagent Concentration	Amount
25 mM Tris base	3.0 g
25 mM Bicine	4.08 g
10% Methanol	100 mL
Deionized water	900 mL

mPAGE® Transfer Buffer (with Methanol) pH 8.2 for Semi-dry Transfer protocol

Reagent	Amount
50 mM Tris Base	3.0 g
50 mM Bicine	4.08 g
Methanol	50 mL
Deionized water	450 mL

mPAGE® Gel Equilibration Buffer pH 8.2 for Semi-dry Transfer Protocol

Reagent	Amount
50 mM Tris Base	3.0 g
50 mM Bicine	4.08 g
Deionized water	500 mL

Troubleshooting Guide

Problem	Probable Cause	Solution
Proteins are not migrating into the gel	Bottom of the gel is obstructed.	Check that tape on the bottom of the gel has been removed prior to sample loading.
		Assure that the open bottom part does not directly contact the bottom of the tank.
Protein sample is not separating	Tris-Glycine running buffer is being used.	Use only MES-SDS or MOPS-SDS running buffers.
Distorted protein bands	Air bubbles in sample wells.	Use a pipette to flush the sample wells with running buffer before sample loading.
	Buffer enters gel because of broken cassette.	Cassette was damaged due to gel tank incompatibility.
Part of the tracking dye changed to yellow	pH value decreased.	Prepare new running buffer with ultrapure water. Check pH.
Streaking	Insoluble or weakly charged particles (such as carbohydrates) in sample.	Heat sample in the presence of SDS, centrifuge sample, and load the supernatant.
	Sample contains too much salt.	Reduce salt content by dialysis or ultrafiltration.
	Sample contaminated with DNA.	Centrifuge sample to clarify.
Electrophoresis time is too long	Sealing tape is not removed from the bottom of the cassette.	Peel the sealing tape off from the bottom of cassette before loading.
	Slow leak in buffer core.	Check the buffer core assembly before adding running buffer to the outer tank.
	Running buffer was not prepared correctly.	Refer to buffer recipe or use premeasured running buffer packets.
	Incorrect running conditions.	Use constant voltage and do not limit the amperage.
		Use a power supply rated for the current generated.
Bands are not well separated	Incorrect gel percentage.	Use the protein migration table to choose the appropriate gel.
	Incorrect running buffer.	Use the protein migration table to choose the appropriate buffer.
	Incompatible running buffer.	Use only mPAGE® MES SDS or MOPS SDS Running Buffer. Do not use Tris Glycine running buffer
	Sample overloading.	Reduce sample concentration.
	Incorrect sample buffer.	Use only mPAGE® 4X LDS Sample Buffer in the sample preparation.
	Running buffer temperature is too high.	Refer to electrophoresis tank manufacturer's user guide for proper running conditions.

Problem	Probable Cause	Solution
Unable to load sample	Debris in the well.	Inspect wells for damage or debris after comb removal.
		Gently wash wells using a transfer pipette.
		Cassette design features a bead of gel for well alignment, excessive force during well washing can displace the gel bead.
Voltage set point cannot be reached	Leaking between the inner and outer tank during run.	Check the buffer core assembly before adding running buffer to the outer tank.
	Electrophoresis tank was incorrectly assembled.	Refer to electrophoresis tank manufacturer's user guide for proper running conditions.
	Excess salt in the sample.	Reduce salt content by dialysis or ultrafiltration.
Air bubbles between the gel and the cassette	Running Buffer temperature is too high.	Refer to electrophoresis tank manufacturer's user guide for proper running conditions.
Gel is overheating	Voltage is set too high.	Do not exceed the constant voltage recommended.
	Wrong running buffer is being used.	Only use appropriate buffers for Bis-Tris gels.
Running Buffer leakage when using • Sigma-Aldrich® Dual Run and Blot System • Thermo XCell I, II, & Surelock™ mini-cell • LONZA PAGEr® Minigel Chamber	No adapter plate was used.	For best results, use with mPAGE® Gel Adapter Plates.
	mPAGE® Gel Adapter plate was installed incorrectly.	Use one adapter per gel. Position the adapters against the tall plate of the gel cassette before assembling gel tank. See illustrations in mPAGE® Bis-Tris Precast Gel Preparation on page 5.
Running Buffer leakage when using Thermo Mini Gel Tank	This tank is not compatible with mPAGE® Bis Tris Gels.	For best results use the mPAGE® Mini Gel Tank (MGT-2 (2 gels) or MGT-4 (4 gels)). The mPAGE® Bis-Tris Precast SDS-PAGE Gels and mPAGE® Gel Adapter can be used with: • Sigma-Aldrich® Dual Run and Blot System • Thermo XCell I, II, & Surelock™ Mini-Cell • LONZA PAGEr® Mini Gel Chamber
Running buffer is leaking from electrophoresis core when using buffer dam (BDAM1) received with mPAGE® Mini Gel Tank or buffer dam received with BioRad® Mini Protean Tank	Incorrect electrophoresis core gasket orientation on buffer dam side.	See Instructions for Using mPAGE® Bis-Tris Precast Gels on page 4 for proper gasket orientation for the gel and buffer dam being used.
	Incorrect electrophoresis core gasket orientation on side with mPAGE® Precast Gel.	
Running buffer is leaking from electrophoresis core when using the mPAGE® Precast Gel Buffer Dam (MPBD) with the mPAGE® Mini Gel Tank or BioRad® Mini Protean Tank.	Incorrect electrophoresis core gasket orientation.	See Instructions for Using mPAGE® Bis-Tris Precast Gels on page 4 for proper gasket orientation for the gel and buffer dam being used.
Only faint bands or no protein bands detected after staining	Some commercial stains require a fixing step for Bis-Tris gels.	Follow the manufacturer's recommendation for fixation and staining protocol.
		Use a stain that does not require a fixation step such as ReadyBlue® Protein Gel Stain.

Product Ordering

Order online at SigmaAldrich.com.

Description	Qty	Catalogue Number
mPAGE® Bis-Tris Precast SDS-PAGE Gels		
4-12%, 10x8, 10-well	10 gels	MP41G10
4-12%, 10x8, 12-well	10 gels	MP41G12
4-12%, 10x8, 15-well	10 gels	MP41G15
4-20%, 10x8, 10-well	10 gels	MP42G10
4-20%, 10x8, 12-well	10 gels	MP42G12
4-20%, 10x8, 15-well	10 gels	MP42G15
8-16%, 10x8, 10-well	10 gels	MP81G10
8-16%, 10x8, 12-well	10 gels	MP81G12
8-16%, 10x8, 15-well	10 gels	MP81G15
8%, 10x8, 10-well	10 gels	MP8W10
8%, 10x8, 12-well	10 gels	MP8W12
8%, 10x8, 15-well	10 gels	MP8W15
10%, 10x8, 10-well	10 gels	MP10W10
10%, 10x8, 12-well	10 gels	MP10W12
10%, 10x8, 15-well	10 gels	MP10W15
12%, 10x8, 10-well	10 gels	MP12W10
12%, 10x8, 12-well	10 gels	MP12W12
12%, 10x8, 15-well	10 gels	MP12W15
Buffers		
mPAGE® 4X LDS Sample Buffer	10 mL	MPSB-10ML
	250 mL	MPSB-250ML
mPAGE® MES SDS Running Buffer Powder (Each packet makes 1L)	5 pkts	MPMES
mPAGE® MOPS SDS Running Buffer Powder (Each packet makes 1L)	5 pkts	MPM0PS
mPAGE® Transfer Buffer Powder (Each packet makes 1L)	10 pkts	MPTRB
Protein Markers		
mPAGE® Color Protein Standard	500 µL	MPSTD4
mPAGE® Unstained Protein Standard	500 µL	MPSTD3
mPAGE® Western Protein Standard	250 µL	MPSTD2

Description	Qty	Catalogue Number
Reagents		
DL-Dithiothreitol solution, 1 M	10 mL	43816-10ML
2-Mercaptoethanol (BME)	25 mL	63689-25ML-F
Lithium dodecyl sulfate (LDS)		L9781
Sodium dodecyl sulfate (SDS)		L3771
Ethylenediaminetetraacetic acid (EDTA)		E5134
Ethylenediaminetetraacetic acid (MOPS)		M1254
2-Morpholinoethanesulfonic acid monohydrate (MES)		M3671
Electrophoresis and Transfer Systems		
mPAGE® Mini Gel Tank, 2 gel	1	MGT-2
mPAGE® Mini Gel Tank, 4 gel	1	MGT-4
mPAGE® Mini Wet Transfer System	1	MWTS
Electrophoresis and Transfer Parts		
mPAGE® Mini Wet Transfer Module	1	MWTM
mPAGE® Mini Wet Transfer Cassette	1	MWTC
mPAGE® Macroporous Sponge	5	BLSP5
mPAGE® Freezer Pack	1	FP2
mPAGE® Electrode Core Gaskets	2	ECG2
mPAGE® Electrode Core Clamp	2	ECCL2
mPAGE® Primary Electrode Core	1	ECPRIME
mPAGE® Secondary Electrode Core	1	ECSEC
Buffer Dam for mPAGE® Mini Gel Tank	1	BDAM1
Buffer Dam for mPAGE® Precast Gels	1	MPBD
mPAGE® Tank Lid with Electrode Cables	1	MLID1
mPAGE® Replacement Tank	1	TNK1
mPAGE® Gel Adapters, for use with XCell SureLock® and other compatible tanks, 2 per pack	1	MPTA
Immunodetection Devices		
SNAP id® 2.0 Systems		
Mini, 7.5 cm x 8.4 cm	2	SNAP2MINI
MultiBlot, 4.5 cm x 8.4 cm	2	SNAP2MB3
Mini, 7.5 cm x 8.4 cm and MultiBlot, 4.5 cm x 8.4 cm	1 pk	SNAP2MB1

Description	Country	Catalogue Number
Power Supplies		
mA400 Basic Power Supply	US plug	MA400-US
	Euro plug	MA400-EU
	UK plug	MA400-UK
	Japan plug	MA400-NI
	China plug	MA400-ZH
mA700 Essential Power Supply	US plug	MA700-US
	Euro plug	MA700-EU
	UK plug	MA700-UK
	Japan plug	MA700-NI
	China plug	MA700-ZH

Description	Qty	Catalogue Number
Gel Stains		
Colorimetric		
EZBlue™ Gel Staining Reagent	500 mL 3.8 L	G1041-500ML G1041-3.8L
Readyblue® Protein Gel Stain	1 L	RSB-1L
ProteoSilver™ Plus Silver Stain Kit	1	PROT-SIL2-1KT
ProteoSilver™ Silver Stain Kit	1	PROT-SIL1-1KT
Reversible Protein Detection Kit for membranes and polyacrylamide gels	1	RPROB-1KT
Coomassie® Brilliant Blue G Solution, concentrate	1 L	B8522
Coomassie® Brilliant Blue R, pure	10 G 50 G	B7920-10G B7920
Fluorescent		
EZFluor™ 1-step Fluorescent Protein Gel Stain		SCT145
EZFluor™ UV 1-step Fluorescent Protein Gel Stain		SCT147
SYPRO® Orange Protein Gel Stain		S5692
SYPRO® Ruby Protein Gel Stain		S4942

Description	Qty	Catalogue Number
Transfer Membranes and Blotting Paper		
Immobilon® Blotting Filter Paper		
sheet, 7 cm x 8.4 cm	100	IBFP0785C
Immobilon®-E Blotting Sandwich		
sheet, 7 cm x 8.4 cm	20	IESN07852
Immobilon®-E PVDF Membrane		
roll, 26.5 cm x 1.875 m	1	IEVH00005
roll, 8.5 cm x 10 m	1	IEVH85R
sheet, 7 cm x 8.4 cm	50	IEVH07850
Immobilon®-FL PVDF Membrane		
roll, 26.5 cm x 1.875 m	1	IPFL00005
roll, 26.5 cm x 3.75 m	1	IPFL00010
roll, 8.5 cm x 10 m	1	IPFL85R
sheet, 7 cm x 8.4 cm	10	IPFL07810
Immobilon®-P Blotting Sandwich		
sheet, 7 cm x 8.4 cm	20	IPSN07852
Immobilon®-P PVDF Membrane		
roll, 26.5 cm x 1.875 m	1	IPVH00005
roll, 26.5 cm x 3.75 m	1	IPVH00010
roll, 8.5 cm x 10 m	1	IPVH85R
sheet, 7 cm x 8.4 cm	20	IPSN07852
sheet, 7 cm x 8.4 cm	50	IPVH07850
Immobilon®-PSQ PVDF Membrane		
roll, 26.5 cm x 1.875 m	1	ISEQ00005
roll, 26.5 cm x 3.75 m	1	ISEQ00010
roll, 8.5 cm x 10 m	1	ISEQ85R
sheet, 7 cm x 8.4 cm	50	ISEQ07850
Immobilon®-NC Nitrocellulose Membrane		
roll, 33 cm x 3 m	1	HATF00010
roll, 8.5 cm x 10 m	1	HATF85R
sheets, 7 cm x 8.4 cm	50	HATF07850
Immobilon® NOW Dispenser	1	IMDISP

Description	Qty	Catalogue Number
Western Blotting Detection Reagents		
Immobilon® UltraPlus Western HRP Substrate	20 mL	WBULP-20ML
	100 mL	WBULP-100ML
Immobilon® ECL Ultra Western HRP substrate	20 mL	WBULS0100-20ML
	100 mL	WBULS0100
Immobilon® Western Chemiluminescent HRP substrate	2x 50 mL	WBKLS0100
	2x 250 mL	WBKLS0500
Immobilon® Forte Western HRP substrate	100 mL	WBLUF0100
	500 mL	WBLUF0500
Immobilon® Crescendo Western HRP substrate	100 mL	WBLUR0100
	500 mL	WBLUR0500
Immobilon® Classico Western HRP substrate	100 mL	WBLUC0100
	500 mL	WBLUC0500
Blocking, Enhancing and Stripping Reagents		
Immunoblot Blocking Reagent	20 G	20-200
ChemiBLOCKER™	2x 500 mL	2170
5% Alkali-soluble Casein	225 mL	70955
Tris Buffered Saline	1 L	T5912
TWEEN® 20, for molecular biology, viscous liquid	50 mL	P9416
	100 mL	P9416
Immobilon® Block-PO Reagent, Phosphoprotein Detection	100 mL	WBAVDP001-100ML
	500 mL	WBAVDP001
Immobilon® Block-FL Reagent, Fluorescent Detection	100 mL	WBAVDFL01-100ML
	500 mL	WBAVDFL01
Immobilon® Block-CH Reagent, Chemiluminescent Detection	100 mL	WBAVDCH01-100ML
	500 mL	WBAVDCH01
Western Blocker™ Solution	400 mL	W0138
Immobilon® Signal Enhancer for Immunodetection	100 mL	WBSH0500-100ML
	500 mL	WBSH0500
Blot Restore Membrane Rejuvenation Kit, 10x • Solution A, 50 mL • Solution B, 50 mL	1	2520-M
Re-Blot™ Plus Strong Antibody Stripping solution, 10X	2x 25 mL	2504
Western-Re-Probe Reagent	100 mL	WB59

Notice

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