Q-PAGE™ Precast Gel

Quick & Quality

Gel Type: Bis-Tris Gel **Cassette size:** Mini (10 x 8.3 cm)

% of Gel / Well No.	8%	12%	4-12%
12 wells	QP2110	QP2310	QP2510
15 wells	QP2120	QP2320	QP2520

Storage and stability- Store Q-PAGE™ Precast Gels at 4°C for periods up to 12 months. **Do not freeze Q-PAGE™ Precast Gels. Remove tape and comb before electrophoresis. Keep Q-PAGE™ Precast Gels flat during storage.**

Description

Q-PAGE™ Bis-Tris Precast Gel is a high-performance and easy to use precast polyacrylamide gel for electrophoresis in Bis-Tris buffer system (MOPS or MES). The optimized gel formula allows Q-PAGE™ Bis-Tris Precast Gel to show improved resolution, accurate results, and an extended shelf-life over conventional Laemmli Tris-HCl gels. Q-PAGE™ Bis-Tris Precast Gels are available in gradient (4 to 12%) and fixed (8% and 12%) concentrations of polyacrylamide in 12-and 15-well formats. Two available cassette sizes, Mini (10 x 8.3 cm) and Midi (10 x 10 cm), are compatible with most popular protein electrophoresis systems. Q-PAGE™ Mini (QP2XXX) Gels are suitable for Bio-Rad® and other systems. Q-PAGE™ Midi (QP3XXX) Gels are suitable for Invitrogen® XCell SureLock® Mini-Cell, Invitrogen® Mini Gel Tank, Hoefer SE260, and other systems.

Key Features:

User-friendly gel cassette:
- Numbered and framed wells for sample loading
- Labeled warning sign and green tape as reminder

Enhanced gel performance:
- Enhanced band sharpness
- Better resolution of small proteins
- Stable for shipping at ambient temperature

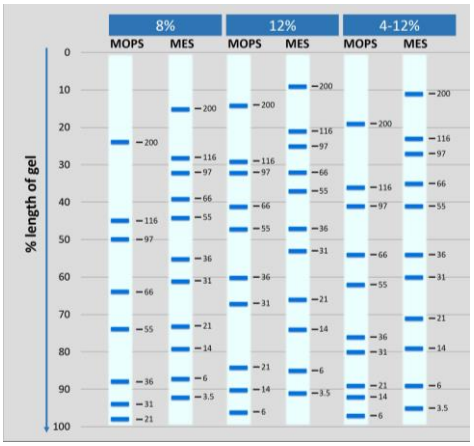
Easy compatibility:
- Available as homogeneous and adjusted gradient gels for a wide range of protein separation.
- Compatible with most popular protein electrophoresis systems

Procedures for Using Q-PAGE™ Bis-Tris Precast Gel

Recommendations/Tips for Gel Running

1. Remove **comb** and **tape** before adaption.
2. Use **fresh** 1X running buffer for the inner cathode chamber.
3. **Do not use Tris-Glycine running buffer for Q-PAGE™ Bis-Tris Precast Gels.**
4. Rinse the wells before sample loading.

Q-PAGE™ Bis-Tris Gel Migration Charts



Bands correspond to the migration of Mark12 Unstained Standard.

Sample Preparation for SDS-PAGE

1. Mix protein sample with 2X sample buffer.
2. Heat the diluted samples at 95°C for 5 min or at 70°C for 10 min.
3. Cool the diluted samples to 4°C and spin down the water condensed on tube surface. (If there is high viscosity part at bottom of tube, transfer supernatant to a new tube.)

Prepare Q-PAGE™ for Sample Loading

1. Open the blister tray of Q-PAGE™ Precast Gel.
2. Briefly rinse the gel cassette with ddH_2O.
3. Remove tape and comb; avoid squeezing the gel.
4. Adapt Q-PAGE™ to electrophoresis system; instruction is provided below. (BioRad Mini-PROTEAN® Core Electrophoresis System is recommended.)
5. Use a pipette to gently wash the wells with running buffer to remove residual storage buffer.
6. Fill the wells with running buffer prior to sample loading.
7. Load samples and pre-stained protein marker into numbered wells.
8. Fill both inner and outer chambers with running buffer to the highest level. Ensure gel wells are completely covered.

Power Setting for Running Q-PAGE™

Optimize the voltage and running time if needed.

Voltage*1	130 V	180 V	230 V*2
Running Time*3	45-60 mins	25-40 mins	15-30 mins
Expected Current			
Initial (per gel)	60-70 mA	100-110 mA	130-140 mA
Final (per gel)	20-25 mA	40-50 mA	60-70 mA
Expected temperature	25-30°C	25-35°C	35-45°C

*1 Set voltage higher than 100 V is recommended.

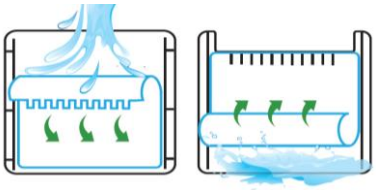
*2 For higher voltage conditions, please use **fresh running buffer** for inner and outer chambers.

*3 Running time varies depending on gel percentage, running buffer, temperature, and power supply.

Remove Q-PAGE™ Gel from Cassette

Open cassette immediately after electrophoresis. Avoid gel drying.

1. Insert the cassette opener into corners of cassette.
2. Sequentially pry the opener to separate the two plates.
3. Gently pull two plates apart from **the top** of cassette.
4. Carefully detach the gel either from the bottom or the top side of the cassette.
   – *Avoid diagonally peeling the gel from the corner.*
   – *Use water to help gel detachment if needed.*



5. Gently remove the gel for further staining or Western blotting.

Gel Staining

Proteins separated using Q-PAGE™ Precast Gels can be further stained with most popular staining reagents, such as Coomassie dyes (R-250 or G-250), Silver-stain solution, and FluoroStain™ Protein Fluorescent Staining Dye. (Cat. No. PS1000)

Transferring Protein from Q-PAGE™ to Blotting Membrane

1. After protein separation using Q-PAGE™, gently detach Q-PAGE™ from cassette and then equilibrate the gel in transfer buffer.
2. Pre-soak blotting membrane and filter papers in transfer buffer.
   **Activate PVDF membrane in methanol before soaking in transfer buffer.*
   ***Prepare 6 filter papers for one gel/membrane sandwich.*
3. Assemble transfer sandwich by orientating cathode, sponge, filter papers, gel, membrane, filter papers, sponge, and anode. The protein goes to the direction of cathode to anode.
4. Carefully move roller over the gel/membrane to remove air bubbles and excess buffer until complete contact is established.
5. Insert transfer cassette into transfer module. Notice that black side of cassette should be next to black side of module.
6. Fill transfer tank with pre-cooled transfer buffer to the highest water level.
7. Set constant voltage at 100 V. Transfer for 90 minutes at low temperature condition. Pre-stained protein marker should be visible on the membrane after transfer is completed. Transfer of proteins to the membrane can be checked using Ponceau S staining before blocking step.

Supplemental Information for Using Q-PAGE™ Precast Gel

Adapting Q-PAGE™ Mini Precast Gel to BioRad Mini-PROTEAN® Core

1. After removing comb and tape, place the Q-PAGE™ Mini Precast Gel with notched plate facing toward inner chamber.
2. Align the notched plate to ensure the edge sits just below the notch at the top of green gasket.
3. Gently press gel cassette toward green gasket and then lock gel cassette with two green arms. Avoid squeezing the cassette and gel.
4. Fill inner chamber with running buffer to check tightness of seal. If necessary, reassemble and check the seal again.
5. Fill inner chamber with running buffer to ensure gel wells are completely covered.
6. Fill outer chamber with running buffer to the highest level.

Adapting Q-PAGE™ Mini Precast Gels to other electrophoresis system, please follow the manufacturer's instruction.

Buffer recipes

2X sample buffer with reducing agent

62.5 mM Tris-HCl pH 6.8, 2% SDS, 25% (v/v) glycerol, 0.01% bromophenol blue, 5% β-mercaptoethanol or 100 mM DTT (added fresh)

10X MOPS running buffer

60.6 g Tris base, 104.6 g MOPS, 10.0 g SDS, 3.0 g EDTA.
Bring up the volume to 1 L with ddH_2O.

10X MES running buffer

60.6 g Tris base, 97.6 g MES, 10.0 g SDS, 3.0 g EDTA.
Bring up the volume to 1 L with ddH_2O.

1X running buffer

Dilute 100 ml 10X running buffer with 900 ml ddH_2O.

10X transfer buffer

30.0 g Tris base, 144.0 g Glycine. Bring up the volume to 1 L with ddH_2O.

1X transfer buffer

*Cool 1X transfer buffer to 4°C before using.

Dilute 100 ml 10X transfer buffer with 200 ml methanol and 700 ml ddH_2O.

**Add SDS to 0.1% to promote transfer of high molecular weight proteins.

Related Products: Q-PAGE™ Precast Gel

Type	TGN			
Cassette	Mini		Midi	
Well No.	12 well	15 well	12 well	15 well
10%	QP4210	QP4220	QP5210	QP5220
4-15%	QP4510	QP4520	QP5510	QP5520

Type	Bis-Tris			
Cassette	Mini		Midi	
Well No.	12 well	15 well	12 well	15 well
8%	QP2110	QP2120	QP3110	QP3120
12%	QP2310	QP2320	QP3310	QP3320
4-12%	QP2510	QP2520	QP3510	QP3520

The latest version of the manual can be downloaded from www.smobio.com/shop.

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