SMOBIO®
Small Bio, Smart Tool

GoPAGE™ Precast Gel

Quick & Clear

QR CODE FOR TEACHING AND LEARNING

Catalog No. **TGN series**

Cassette Size	Polyacrylamide Percentage	
	10%	4-15%
Mini (10 X 8.3 cm)	**GL4210**	**GL4510**
Midi (10 X 10 cm)	**GL5210**	**GL5510**

Storage and stability- Store GoPAGE™ Precast Gels at 4°C for periods up to 12 months. **Do not freeze GoPAGE™ Precast Gels. Do not press GoPAGE™ Precast Gels**

Related Products: Bis-Tris series

Cassette Size	Polyacrylamide Percentage		
	8%	12%	4-12%
Mini (10 X 8.3 cm)	**GL2110**	**GL2310**	**GL2510**
Midi (10 X 10 cm)	**GL3110**	**GL3310**	**GL3510**

Description

GoPAGE™ TGN (**T**ris-**G**lycine **N**ovel) Precast Gels are ready-to-use acrylamide gels for SDS-PAGE running in Tris-Glycine buffer system. With unique formula, GoPAGE™ TGN Precast Gels perform enhanced resolution, sharper bands, and longer shelf life as compared with conventional Laemmli Tris-HCl gels. The protein migration patterns in GoPAGE™ TGN series, however, are similar with typical Laemmli Tris-HCl gels, and thus GoPAGE™ TGN Precast Gels are compatible to traditional SDS-PAGE and subsequent analyses.

GoPAGE™ TGN Precast Gels are available in gradient (4 to 15%) and fixed (10%) concentrations of polyacrylamide in 12-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. GoPAGE™ Mini (GL4XXX) Gels are suitable for Bio-Rad® and other systems. GoPAGE™ Midi (GL5XXX) Gels are suitable for Invitrogen® Novex®, Hoefer SE260, and other systems.

Key Features:

User-friendly gel cassette:

Easy to use- No comb or tape to remove.

Easy to load samples- Numbered wells; extended and fixed well separator to prevent sample carryover.

Easy to monitor- Transparent reference lines on the gel cassette help to monitor electrophoresis.

Unique gel formula:

Sharpness- Enhances band sharpness

Long shelf life- Up to 12 months when stored at 4°C

Broad compatibility:

Wide separation range- Available as homogeneous and adjusted gradient gels for a wide range of protein separation.

Compatibility- Two cassette sizes suitable for most mini-gel tanks.

Procedures for Using GoPAGE™ TGN Precast Gel

Recommendations/Tips for Gel Running

Always use fresh 1X running buffer for the inner cathode chamber. To save running buffer, the previously used 1X running buffer can be poured into the outer anode chamber.

Running Buffer Preparation

Prepare 10X stock running buffer with the following recipe:

10X running buffer:

Tris base 30.0 g, Glycine 144.0 g, SDS 10.0 g.

Deionized water to 1000 ml.

Dilute to 1X for use.

Sample Preparation and Gel Loading

1. Mix sample with 2X sample buffer.
   Recipe of 2X sample buffer with reducing agents:
   62.5 mM Tris-HCl pH 6.8, 2% SDS, 25% (v/v) glycerol, 0.01% bromophenol blue, and 100 mM DTT (or 5% β-mercaptoethanol) as reducing agent.
2. Heat the diluted samples at 95°C for 5 min or at 70°C for 10 min.
3. **Rinse the gel cassette and wells with deionized water or 1X running buffer for removal of gel storage buffer.**
4. Adapt GoPAGE to electrophoresis systems (instructions are provided below).
5. Fill the wells with running buffer prior to sample loading.
6. Load samples into numbered wells.

Adapting GoPAGE™ TGN Precast Gel to Electrophoresis Systems

- **Adapting GoPAGE™ TGN Mini Precast Gel (GL4XXX series) to BioRad Mini-PROTEAN® Core**

1. Place the GoPAGE Mini Precast Gel with short plate facing toward inner chamber.
2. Align the short 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 1X running buffer to check tightness of seal. If necessary, reassemble and check the seal again.
5. Fill inner chamber with 1X running buffer to ensure gel wells are completely covered.
6. Fill outer chamber with 1X running buffer to the highest level.

- **Adapting GoPAGE™ TGN Midi Precast Gels (GL5XXX series) to Invitrogen® Novex® Mini-Cell**

1. Place the GoPAGE Midi Precast Gels with notched plate facing toward inner chamber. No extra adapter is needed.
2. Seat the gels on the bottom of Novex® Mini-Cell and lock into place with the gel tension wedge.
3. Fill the inner chamber with 1X running buffer to check tightness of seal. If necessary, reassemble and check the seal again.
4. Fill inner and outer chambers with 1X running buffer. Ensure gel wells are completely covered.

- **Adapting GoPAGE™ TGN Midi Precast Gels (GL5XXX series) to Hoefer SE260 mini-vertical gel electrophoresis unit**

1. Place the GoPAGE Midi Precast Gels with notched plate facing toward the gasket of upper buffer chamber core.
2. Seat the gels on the bottom of the lower chamber and center the gel cassette so that gasket seals both sides.
3. Gently press gel cassette toward gasket and then lock gel cassette with two clamps.
4. Fill the upper chamber with 1X running buffer to check tightness of seal. If necessary, reassemble and check the seal again.
5. Fill upper and lower chambers with 1X running buffer. Ensure gel wells are completely covered.

- **Adapting GoPAGE™ TGN Precast Gels to other electrophoresis system, please follow the manufacturer's instruction.**

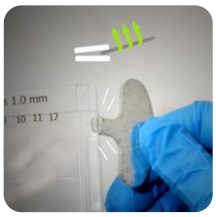
Running Conditions

	150 V	200 V*2	250 V*3	300 V*3
Running Time*1	50-75 mins	40-65 mins	30-55 mins	20-40 mins
Expected Current				
Initial (per gel)	30-40 mA	60-70 mA	90-100 mA	110-120 mA
Final (per gel)	10-20 mA	20-25 mA	25-30 mA	40-50 mA
Expected temperature	25-30°C	25-30 °C	25-35°C	20-35°C

*1 The running time may vary depending on gel percentage, gel size, running buffer, power supply and the temperature in the laboratory.
*2 **Try 200 V first, and optimize the voltage and running time if needed.**
*3 For higher voltage conditions, please always use **fresh** running buffer for inner and outer chambers.

Removing Gel from Cassette

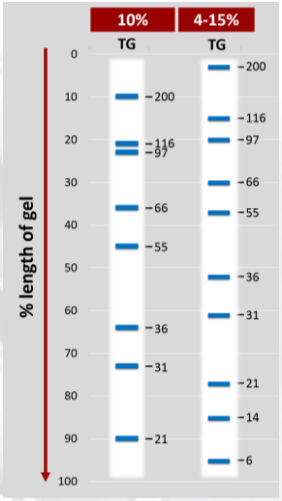
1. Insert the cassette opener into four corners of cassette.
2. Carefully pry the opener to separate the two plates.
3. Gently pull two plates apart, allowing gel to rest on the top plate.
4. **Carefully detach the gel from the plate with water flushing or in the buffer.**
5. Gently remove the gel for further staining or Western blotting.



Gel Staining or Gel Blotting

Proteins separated using GoPAGE™ TGN 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), or can be transferred to a PVDF or nitrocellulose membrane.

GoPAGE™ TGN Gel Migration Charts



*Bands correspond to the migration of Mark12 Unstained Standard.

Troubleshooting Guidelines

Problem	Possible Cause	Suggested Solution
Bubbles between gel and cassette	Gel has been frozen or stored at wrong temperature.	Store GoPAGE Precast Gels at 4°C.
Buffer leaking from the inner chamber	Untight assembly of gels to the electrode modules	Reassemble GoPAGE gels into the electrode modules. Fill outer chamber with 1X running buffer to the highest level.
Samples do not sink into the wells.	Residual gel storage buffer in the wells	Rinse the gel wells with ddH_2O or 1X running buffer before loading.
	Insufficient sample buffer	Use more sample buffer to prepare samples.
Gels run faster or more slowly than expected.	Incorrect running buffer	Check buffer composition. Use fresh 1X running buffer for inner chamber.
Crooked bands at middle or bottom of gel	Gel has been frozen or stored at wrong temperature. Incorrect running buffer	Store GoPAGE Precast Gels at 4°C. Check buffer composition. Use fresh 1X running buffer for inner chamber.
Band pattern curves toward one or both sides of gel.	Buffer leaking from the inner chamber Excessive heating of gel Insufficient buffer in inner or outer buffer chamber	Check assembly of gels into the electrode modules. Check buffer composition. Or dilute running buffer to 0.5-0.75X. Do not exceed recommended running conditions. Fill inner and outer chambers to completely cover gel wells.
Poor resolution or fuzzy bands	Excessive heating of gel Incorrect running buffer	Check buffer composition. Do not exceed recommended running conditions. Check buffer composition.
Bands are missing on the membrane after Western transferring	Air bubbles remain between the blotting membrane and the gel.	Remove air bubbles between gel and membrane by carefully moving the roller over the membrane.
Bands do not look flat, trail off in multiple directions on the membrane after Western transferring.	Contact between the membrane and the gel was poor; excess buffer remains between the blotting membrane and the gel.	Use thicker/more filter paper in the gel/membrane sandwich Remove excess buffer between gel and membrane by carefully moving the roller over the membrane.
Apparent molecular sizes of prestained protein markers are different as indicated.	Prestained protein markers used have not been calibrated for use with GoPAGE gels. Dyes for staining protein markers affect the migration patterns of prestained proteins in different buffer systems.	Calibrate prestained protein markers against unstained proteins of known size or use SMOBIO's ExcelBand™ Protein Markers.