Stain-Free Precast Gel, Tris-Gly 4-20%, 10 wells, 1.0mm

Product Code:BR00021TV

Size: 10 pcs

◆ Product Introduction

This product, Tris-Gly Coomassie-Free Precast Gel, is a safe, rapid, and high-performance precast polyacrylamide gel. It is commonly used in PAGE and Western blot detection, where protein bands can be imaged directly via UV exposure without the need for gel staining.

◆ Product Features

1.No gel staining required; protein bands can be directly imaged via UV exposure.

2.Adopts coated plastic gel plates, which effectively reduce non-specific protein adsorption, resulting in sharper and clearer protein bands.

3.Short electrophoresis time: using ultra-fast electrophoresis buffer (BR00007), electrophoresis can be completed in 25 minutes at 200 V.

4.Easy-to-open gel clips: the plastic plates can be easily pried open with a screwdriver.

5.SDS-free precast gel, suitable for both denaturing and non-denaturing electrophoresis.

6.Utilizes automated gel casting production technology to ensure high stability and reproducibility of product quality.

7.Compatible with mainstream mini electrophoresis tanks such as Bio-Rad, Invitrogen, Tanon, Junyi Dongfang, and Beijing Liuyi.

8.Provides homogeneous gels and gradient gels in multiple concentrations.

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◆ Storage Conditions

1. Transport at room temperature. When stored at room temperature, it should be placed in a cool place, avoiding drastic temperature changes and direct sunlight.

2. Store at 2-8℃ with a shelf life of 12 months.

3. Do not store below 0℃. The gel will freeze and solidify below 0℃, producing bubbles and cracks, leading to gel scrapping.

◆ Product Composition

Name	Specification	Storage Condition
Stain-Free Precast Gel, Tris-Gly 4-20%, 10 wells, 1.0mm	10 pcs	2-8℃
Instruction Manual	1 copy	/

◆ Basic Information

Gel Plate Size	Width × Height × Thickness: 100 × 89 × 4.8 mm
Gel Size	Width × Height × Thickness: 84 × 74 × 1 mm
Acr-Bis	29:1
Stacking Gel	4%, 1.5 cm
Gel Thickness	1.0 mm
Number of Wells	10 Wells
Maximum Sample Loading Volume	50 μL
Packaging	10 pcs/box

◆ Stain-Free Precast Gel Selection Guide

Product Code	Name	Maximum Sample Loading Volume
BR00020TV	Stain-Free Precast Gel, Tris-Gly 4-20%, 15 wells, 1.0mm	30 μL
BR00021TV	Stain-Free Precast Gel, Tris-Gly 4-20%, 10 wells, 1.0mm	50 μL
BR00030BV	Stain-Free Precast Gel, Bis-Tris 4-20%, 15 wells, 1.0mm	30 μL

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BR00031BV	Stain-Free Precast Gel, Bis-Tris 4-20%, 10 wells, 1.0mm	50 μL
BRK0020TV	Stain-Free Precast Tris-Gly (4-20%)15 well Gradient Gel Ultra-Fast Protein Electrophoresis Kit	30 μL
BRK0021TV	Stain-Free Precast Tris-Gly (4-20%)10 well Gradient Gel Ultra-Fast Protein Electrophoresis Kit	50 μL
BRK0030BV	Stain-Free Precast Bis-Tris (4-20%)15 well Gradient Gel Ultra-Fast Protein Electrophoresis Kit	30 μL
BRK0031BV	Stain-Free Precast Bis-Tris(4-20%)10 well Gradient Gel Ultra-Fast Protein Electrophoresis Kit	50 μL

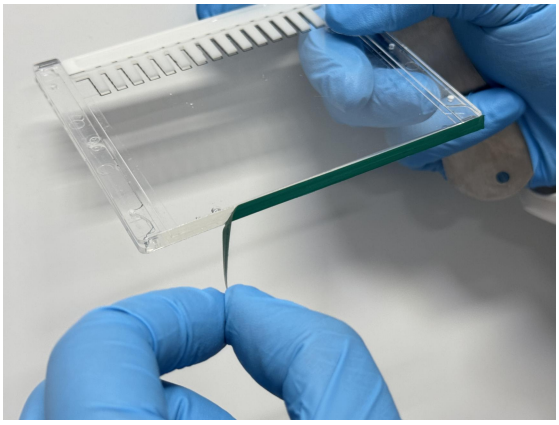
◆ Operating Procedures

All precast gels are SDS-free and can be used for both denaturing and non-denaturing electrophoresis depending on the type of electrophoresis buffer.

Note: When used with the ultra-fast electrophoresis buffer (BR00007), the entire process of sample preparation, electrophoresis, and imaging can be completed within 30 minutes, yielding optimal electrophoresis results.

Non-Denaturing Electrophoresis (Native-PAGE)

1. Take the Coomassie-free precast gel out of the packaging bag and peel off the bottom sealing tape;



2. Fix the precast gel in the electrophoresis tank.

3. Add 1× Tris-Glycine non-denaturing electrophoresis buffer to the electrophoresis tank. Fill the inner tank with electrophoresis buffer, and the outer tank should be filled with electrophoresis buffer to at least 1/3 of the liquid level (but not exceeding the gel plate). Then slowly pull out the comb.

4. Gently pipette the sample wells to remove residual gel solution.

5. Sample loading: Mix the non-denatured protein sample with 5× non-denaturing Loading buffer at a

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ratio of 4:1. During sample loading, be careful not to let the pipette tip pierce the gel or insert too deeply, as this may deform the gel plate and cause liquid leakage during subsequent electrophoresis. (For acidic proteins with an isoelectric point (pI) < 7, normal sample loading and electrophoresis can be performed. In contrast, basic proteins with an isoelectric point (pI) > 7 carry a positive charge, so the electrodes need to be reversed (connect the red electrode to the black terminal and the black electrode to the red terminal). At this time, the sample wells become the positive electrode, and the sample migrates downward during electrophoresis.)

6. Connect the power supply and run the gel under constant voltage (180 V). Stop the electrophoresis when the bromophenol blue indicator migrates to the bottom of the gel plate or the predetermined position in the experiment.

7. After electrophoresis, take out the gel. Use a gel opener to slowly pry open the plates along the side edge of the plates, open the gel cassette, and gently take out the gel. (For specific operations, refer to the "Gel Peeling" section.)

Note: The protein migration rate of non-denaturing gels is affected by various factors such as protein molecular weight and protein spatial structure.

Denaturing Electrophoresis (SDS-PAGE)

1. Take the Plastic Gel Precast Gel Tris-Gly out of the packaging bag, tear off the bottom sealing tape, fix it in the electrophoresis tank, and install the electrophoresis device.

2. Add 1× Tris-Glycine-SDS electrophoresis buffer to the electrophoresis tank. Fill the inner tank with electrophoresis buffer, and the outer tank should be filled with electrophoresis buffer to at least 1/3 of the liquid level (but not exceeding the gel plate). Then slowly pull out the comb.

3. Gently pipette the sample wells to remove residual gel solution.

4. Sample loading: Mix the protein sample with 5× denaturing Loading buffer at a ratio of 4:1 and heat-treat the mixture. During sample loading, be careful not to let the pipette tip pierce the gel or insert too deeply, as this may deform the gel plate and cause liquid leakage during subsequent electrophoresis.

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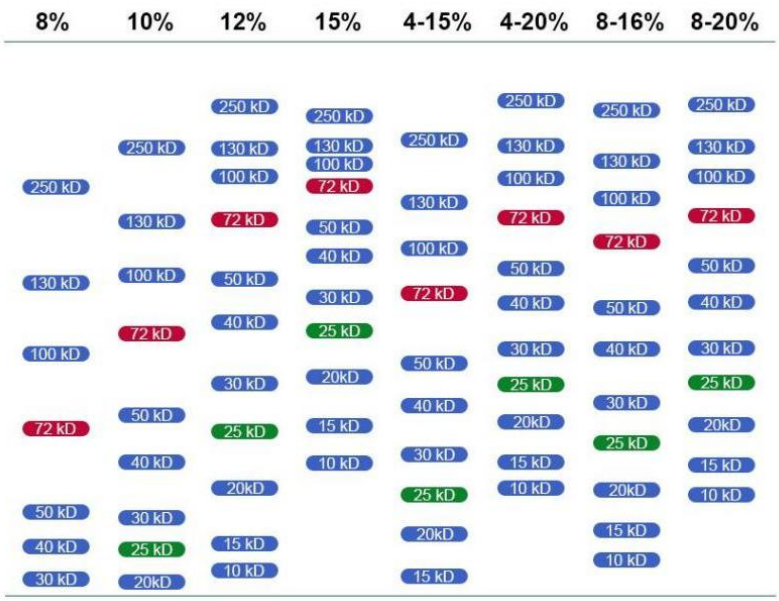
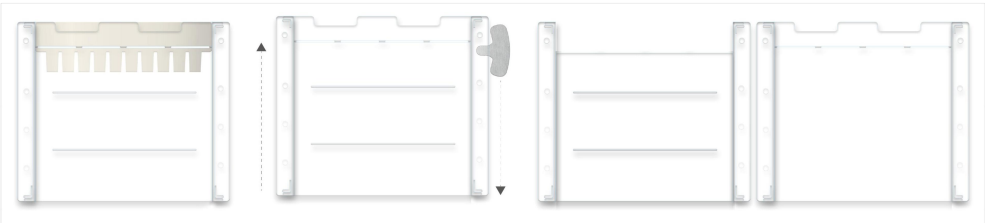
5. Connect the power supply and run the gel under constant voltage (180 V). Stop the electrophoresis when the bromophenol blue indicator migrates to the bottom of the gel plate or the predetermined position in the experiment.

6. After electrophoresis, take out the gel. Use a screwdriver to slowly pry open the plates along the side edge of the plates, open the gel cassette, and gently take out the gel. (For specific operations, refer to the "Gel Peeling" section.)

Note: Note: Please refer to the separation chart below to select the appropriate concentration of precast gel, which will help you achieve better separation of protein electrophoresis bands.Precast Gel Separation Chart (Denaturing):



Gel Peeling:



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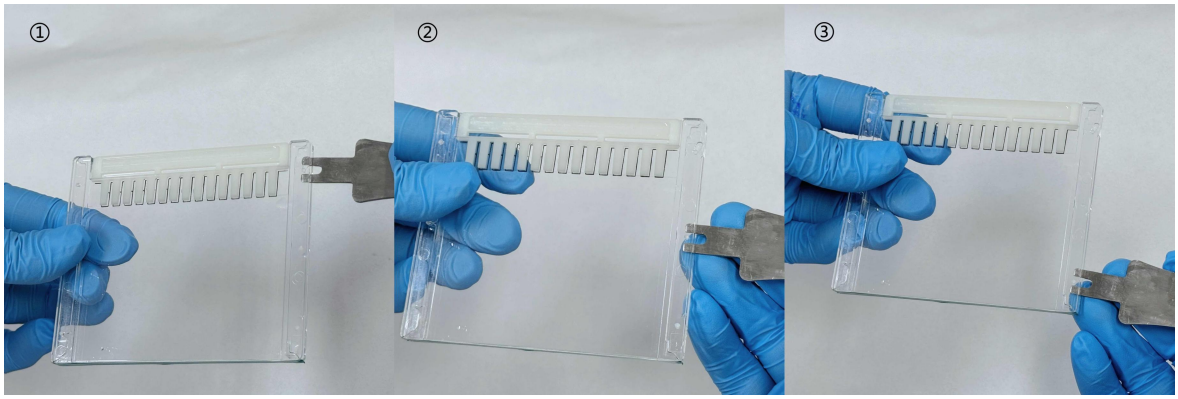

◆ **Coomassie-Free Imaging**

Place the gel removed from the gel plate into an imaging system for UV exposure imaging, or observe it directly on a UV gel cutting station.

Notes: ① UV excitation of the fluorophore requires a certain amount of time. Generally, clear protein bands will appear on the gel after 3 – 10 minutes of exposure; ② To observe protein bands on the membrane after Western Blot transfer, the gel must be excited by UV to display clear bands before the transfer operation. If transferring directly followed by UV excitation, the fluorescent signal will be very weak or absent;③ To prevent the gel from drying out under prolonged UV exposure, it is recommended to spray a small amount of pure water on the gel to keep it moist.

◆ **The Selection of Electrophoresis Tanks**

Precast gels are compatible with most mini SDS-PAGE electrophoresis tanks, including

a. Bio-Rad Mini-PROTEAN (II/3 /Tetra System) (to be used with BR00020 baffle);

b. Hoefer Mighty Small (SE 250/ SE 260/ SE 280);

c. Life Technology Novex Mini-Cell (to be used with BR00022 baffle);

d. Life Mini Gel Tank (to be used with BR00019 baffle);

e. Beijing Liuyi DYCZ-25E, DYCZ-24K, DYCZ-24KS, DYCZ-24KF;

f. Junyi Dongfang JY-SCZ2+;

g. Tianneng VE180;

or other electrophoresis tanks with a gel plate width of 10 cm.

Application in Life electrophoresis tanks: If necessary, please inform us when ordering this product.

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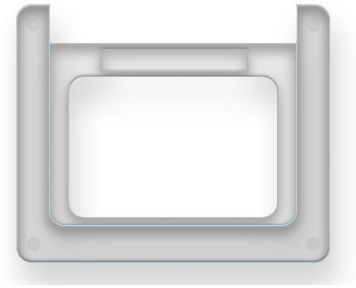
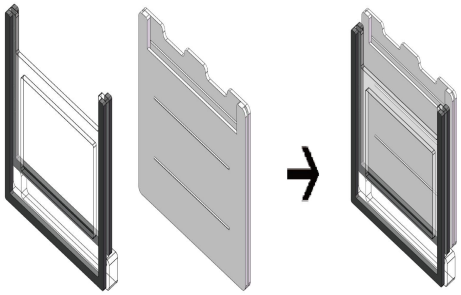




Place the BR00022 baffle on the outer side of the gel. Place the BR00019 baffle on the inner side of the gel.

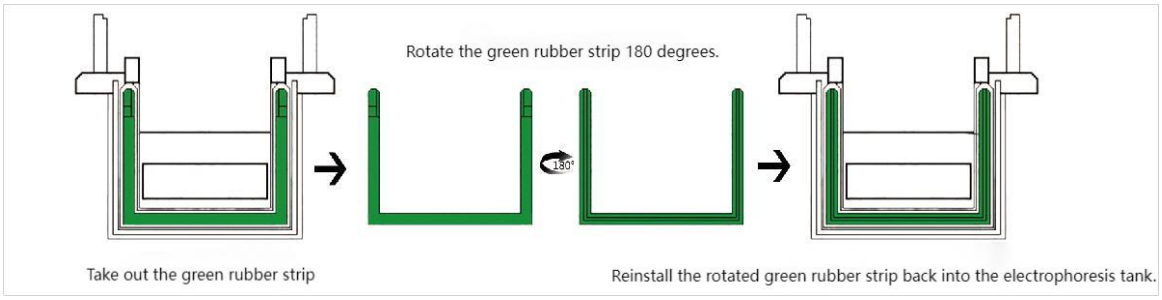
Application in Bio-Rad Electrophoresis Tanks:

The top of the U-shaped sealing strip in the Bio-Rad Mini-PROTEAN series electrophoresis tanks has a raised structure, while the short glass plate of ABclonal precast gels has a concave structure—resulting in a flat surface at this location. Before electrophoresis, the sealing strip with the raised structure must be removed and reinstalled in reverse, with the smooth side facing outward, to prevent liquid leakage (as shown in the figure below). Additionally, there are plastic gaskets with a thickness of approximately 0.5 mm; add them as needed based on the actual width of your electrophoresis tank.

a. Pull out the U-shaped sealing strip (the green part in the figure) from the Bio-Rad electrophoresis tank. Note that the two ends of the sealing strip have protrusions at this point: the side with the protrusions is the front side, and the side without protrusions is the back side.

b. Rotate the sealing strip 180 degrees (with the front side facing inward and the back side facing outward), then reinstall it in the electrophoresis tank. Be sure to press the periphery of the sealing strip firmly to prevent liquid leakage.

c. Place the precast gel and proceed with normal electrophoresis operations.



◆ **Precautions**

1. Tris-Gly precast gels utilize a Tris-Glycine buffer system and must be used with Tris-Glycine

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electrophoresis buffer;

2. For sharper and straighter protein bands, reduce the voltage to 150 V and appropriately extend the electrophoresis time;

3. UV penetration is weak—ensure no glass, diaphragms, plastic gel plates, or other barriers exist between the gel and the stage;

4. Reuse of electrophoresis buffer is not recommended. After electrophoresis, the ionic strength and buffering capacity of the buffer change, which cannot guarantee optimal electrophoresis results;

5. For wet transfer, perform membrane transfer at a constant voltage of 120 V for 60–90 minutes. To achieve better transfer efficiency, determine the transfer effectiveness by comparing the prestained markers remaining on the precast gel with those on the membrane, and adjust the transfer conditions accordingly. The molecular weight of the target protein, gel concentration, and methanol concentration in the transfer buffer all affect transfer efficiency. For large proteins, low-concentration gels are preferred;

Protein Molecular Weight	Above 100 kDa	10-100 kDa	Below 10 kDa
Recommended Methanol Concentration	5%	10%	20%-30%

6. This product is only for scientific research use by professional personnel and shall not be used for clinical medical diagnosis or other unreasonable purposes. It shall not be stored in ordinary residences.

7. For your safety and health, please wear personal protective equipment and experimental clothing during operation.

8. Before starting the experiment, please read the instruction manual carefully.

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