EVOgel™

Cat. No.: SM803-0500 Size: 500 ml
Cat. No.: SM803-0100 Size: 100 ml
Storage: Stable at room temperature up to 18 months

Description

EVOgel™, evolutionary SDS polyacryamide solution, polymerize into an advanced molecular sieve for the electrophoretic separation of proteins. Because of the advanced buffer chemistry used in the gel matrix solution, EVOgel™ allows a single separating gel. Band resolution is unparalleled over a molecular range of 2.5 to 250 kDa. The new hybrid formulation of EVOgel™ gives these gels an increased gel strength, which allows for easier handling. EVOgel™ will work with all types of universal electrophoresis apparatus. Our gel mixtures are formulated for optimal performance in mass spectrometry-based proteomics experiments.

Feature

- High gel strength – allows easier handling
- Ready to use in less than 10-15 minutes – just add TEMED and ammonium persulfate to polymerize the gel
- No stacking gel required – permits longer gel separations
- High resolution gels for protein separation across a broad molecular weight range.

Quality Control

The quality of the EVOgel™ is tested on a lot-to-lot basis to ensure consistent product quality.

Required Materials

TEMED
Ammonium persulfate
Electrophoresis equipments

Application

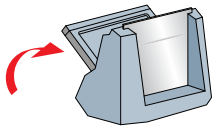
- Western blotting
- Gel staining
- Mass spectrometry-based proteomics experiments

Required Materials

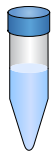
- Saran wrap
- Safety light
- Cassette

Protocol
Easy Procedure

For 1.0 mm thickness, 8x10cm of gel:

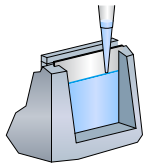


1. Set up the gel casting chamber.



Resolving gel:

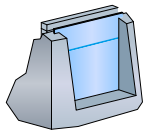
2. Add 6 ml of EVOgel to the 15 ml centrifuge tube.
3. Add 6 µl of TEMED and gently mix.
4. Add 60 µl of 10% ammonium persulfate and gently mix. Do not let bubbles form or solution mix with air.



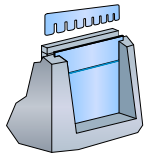
5. Pour the gel solution into gel cartridge to the full the cassette to 0.5–1 cm below the bottom of the teeth on the comb.
6. Allow to sit for approximately 10-15 minutes for polymerization.

Stacking gel:

7. Add 1 ml of EVOgel™ to the 15 ml centrifuge tube.
8. Add 1 ml of distilled deionized water and gently mix.
9. Add 2 µl of TEMED and gently mix.
10. Add 20 µl of 10% ammonium persulfate and gently mix.



11. Pour the gel solution into gel cartridge to top of the short plate.



12. Add the comb.
13. Allow to sit for approximately 10 minutes for polymerization.

- For larger or smaller volumes, adjust the amount of EVOgel™, TEMED, and ammonium persulfate added.

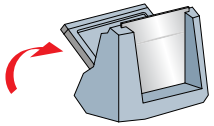
Casting Preparation Volumes

8 X 10 cm	0.75 mm (G= numbers of gel)		1.0 mm (G= numbers of gel)		1.5 mm (G= numbers of gel)	
Mini Gel	Stacking gel	Resolving gel	Stacking gel	Resolving gel	Stacking gel	Resolving gel
EVOgel™	0.75 ml X G	4 ml X G	1 ml X G	6 ml X G	1.5 ml X G	8 ml X G
Distilled deionized water	0.75 ml X G	–	1 ml X G	–	1.5 ml X G	—
TEMED	1.5 µl X G	4 µl X G	2 µl X G	6 µl X G	3 µl X G	8 µl X G
10 % Ammonium persulfate	15 µl X G	40 µl X G	20 µl X G	60 µl X G	30 µl X G	80 µl X G

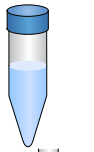
10 X 10 cm	0.75 mm (G= numbers of gel)		1.0 mm (G= numbers of gel)		1.5 mm (G= numbers of gel)	
Mini Gel	Stacking gel	Resolving gel	Stacking gel	Resolving gel	Stacking gel	Resolving gel
EVOgel™	1 ml X G	6 ml X G	1.25 ml X G	8 ml X G	1.5 ml X G	10 ml X G
Distilled deionized water	1 ml X G	–	1.25 ml X G	–	1.5 ml X G	—
TEMED	2 µl X G	6 µl X G	2.5 µl X G	8 µl X G	3 µl X G	10 µl X G
10 % Ammonium persulfate	20 µl X G	60 µl X G	25 µl X G	80 µl X G	30 µl X G	100 µl X G

Rapid Procedure

For 1.0 mm thickness, 8x10cm of gel:

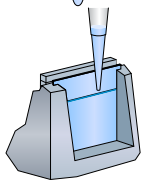


1. Set up the gel casting chamber.



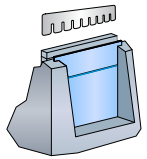
Resolving gel:

2. Add 8 ml of EVOgel™ to the 15 ml centrifuge tube.
3. Add 8 µl of TEMED and gently mix.
4. Add 80 µl of 10% ammonium persulfate and gently mix.
   Do not let bubbles form or solution mix with air.



5. Pour the gel solution into gel cartridge to top of the short plate.
6. Add the comb.
7. Allow to sit for approximately 10-15 minutes for polymerization.

➢ For larger or smaller volumes, adjust the amount of EVOgel™, TEMED, and ammonium persulfate added.



Casting Preparation Volumes

8 X 10 cm	0.75 mm (G= numbers of gel)	1.0 mm (G= numbers of gel)	1.5 mm (G= numbers of gel)
Mini Gel	Resolving gel	Resolving gel	Resolving gel
EVOgel™	5.5 ml X G	8 ml X G	11 ml X G
TEMED	5.5 µl X G	8 µl X G	11 µl X G
10 % ammonium persulfate	55 µl X G	80 µl X G	110 µl X G

10 X 10 cm	0.75 mm (G= numbers of gel)	1.0 mm (G= numbers of gel)	1.5 mm (G= numbers of gel)
Mini Gel	Resolving gel	Resolving gel	Resolving gel
EVOgel™	8 ml X G	10.5 ml X G	13 ml X G
TEMED	8 µl X G	10.5 µl X G	13 µl X G
10 % ammonium persulfate	80 µl X G	105 µl X G	130 µl X G

Running Buffer Preparation:

10X Laemmli electrophoresis running buffer
Dissolve the following components in 1 liter distilled deionized water:
30.0 g Tris base
144.0 g glycine
10.0 g SDS
* The pH of the buffer should be 8.3 and no pH adjustment is required.
  Store the running buffer at room temperature and dilute to 1X with distilled deionized water before use.

Running Conditions for EVOgel™

	100V	200V	300V
	Low voltage	Standard	Rapid
Run Time	90-100 minutes	45-55 minutes	25-35 minutes*
			*Note: Need cooling

*When running 1-2 gels in the electrophoresis system, do not leave the companion module in the tank.
*Do not run different gel types (chemistry) or percentages in the same tank at the same time.
*Do not use acid or base to adjust pH of running buffer.

Troubleshooting

Refer to the table below to troubleshoot problems that you may encounter when made SDS polyacrylamide gels with the solution:

Problem	**Cause**	**Solution**
Gel does not polymerize or polymerizes too slowly	Temperature too low	Pour gel at room temperature
Fuzzy bands	Protein sample is only partially denatured	Ensure that the protein is fully denatured, use fresh sample buffer, heat longer
	The gel was run for too long	Watch the front dye as an indicator for proper running duration
Too many bands for a purified protein	Proteolysis	Minimize the time between sample preparation and electrophoresis
Smile effect of bands	Center of the running gel hotter than both ends	Decrease power. Ensure buffer is properly formulated
Diffuse tracking dye	Degradation of sample solution or buffer	Prepare fresh reagents and sample
	Protein sample not equilibrated	Equilibrate sample to running conditions

Caution

1. During operation, always wear a lab coat, disposable gloves, and protective equipment.
2. Research Use Only. Not intended for any animal or human therapeutic or diagnostic uses.