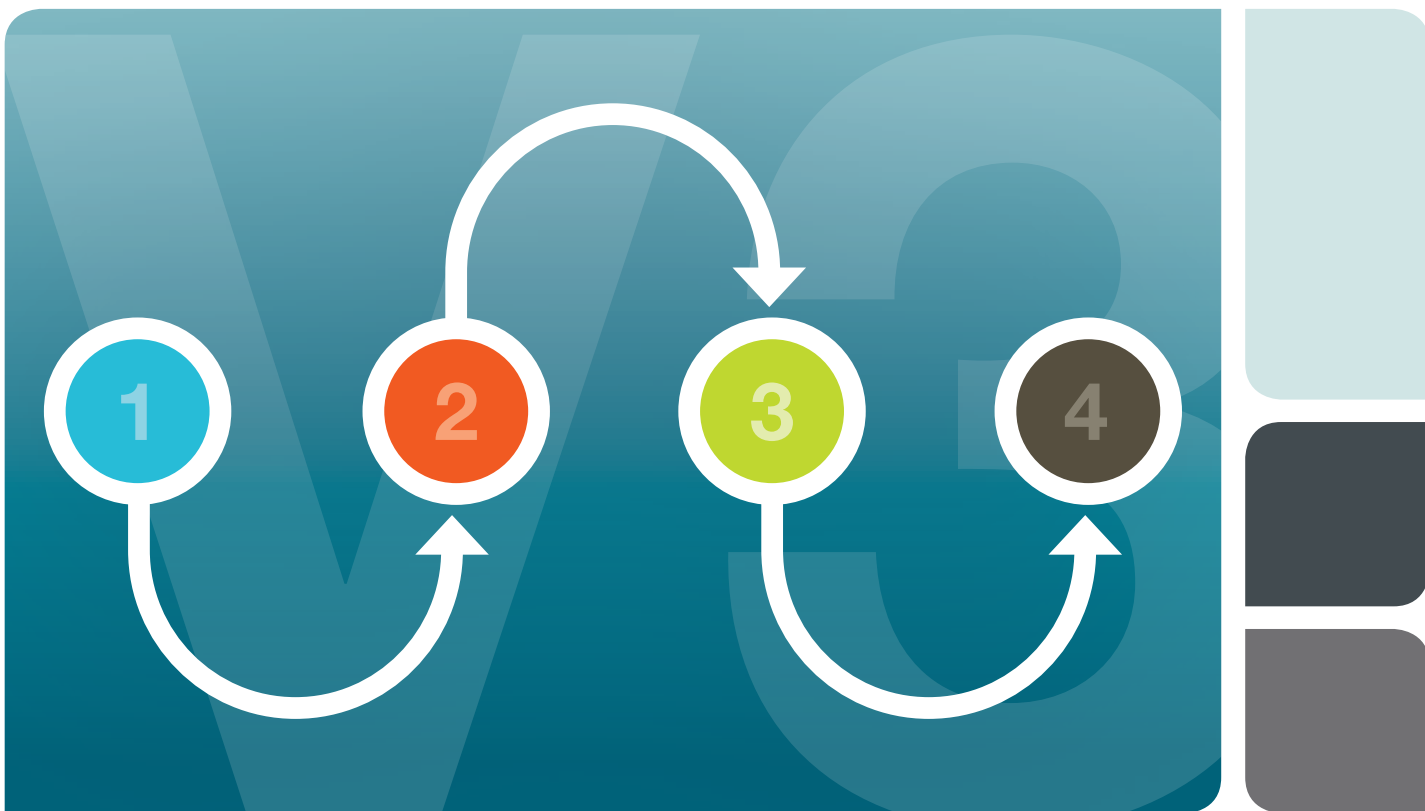


Electrophoresis + Blotting + Imaging



**V3** Western Workflow™  
Visualize. Verify. Validate.



# Why choose the **V3** Western Workflow™ from Bio-Rad?



## Speed

Rapid, high-quality separation of proteins in as little as 15 minutes.

Efficient protein transfer in as little as 3 minutes.



## Confidence

Confirmation of protein separation and transfer without staining and destaining provides checkpoints throughout a western blot.



## Quantitation

Quantitation and normalization made simple with stain-free technology.

# V3 Western Workflow

## Separate Proteins

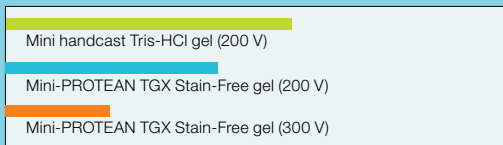
1

Rapidly separate proteins in as little as 15 minutes with Criterion™ and Mini-PROTEAN® TGX Stain-Free™ precast gels.

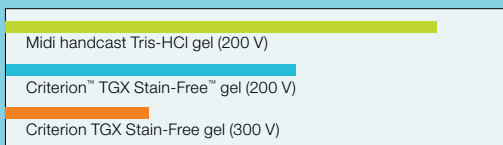
TGX chemistry offers superior protein separation with fast run times, features a one year shelf life, and uses standard Tris-glycine running buffers.

Stain-free technology is a sensitive, time-saving alternative to traditional Coomassie staining and is compatible with western blotting. No staining or destaining is required, offering a streamlined workflow.

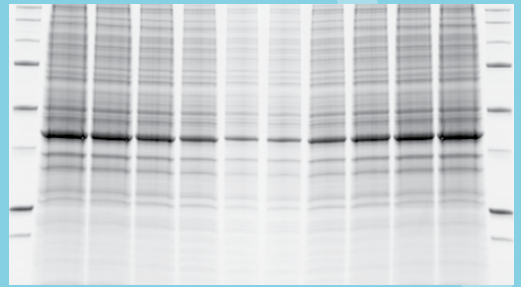
### Mini gel typical run times



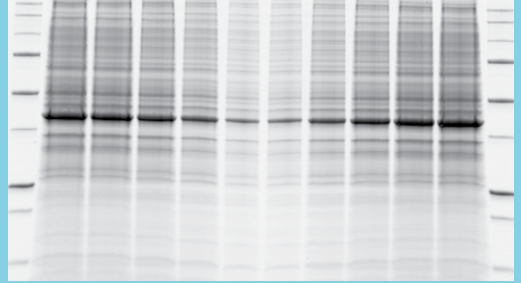
### Midi gel typical run times



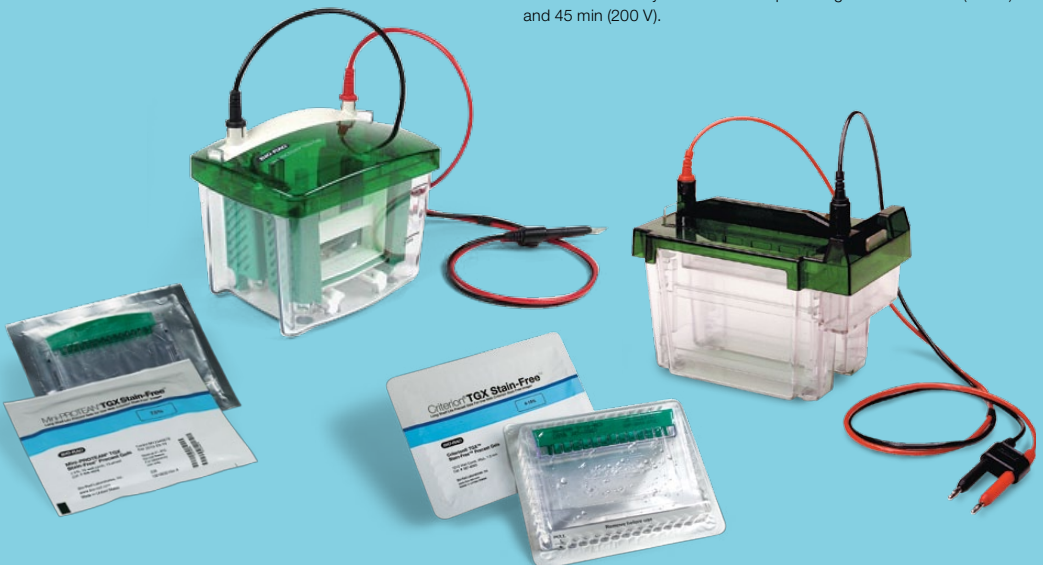
### Protein separation at 300 V



### Protein separation at 200 V



**Fig. 1. Protein separation at 300 V or 200 V yields similar results.** Criterion™ TGX Any kD Stain-Free™ precast gel run for 30 min (300 V) and 45 min (200 V).



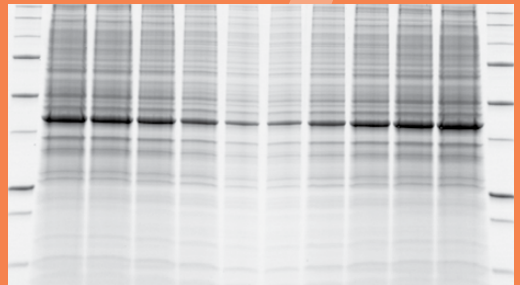
## Visualize Separation

Immediately visualize separation with stain-free technology and the GelDoc™ EZ imager with one easy step.

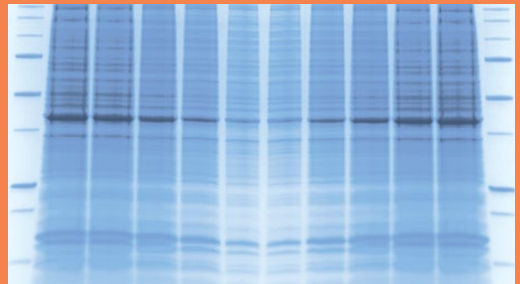
Combined with stain-free precast gels, the GelDoc EZ imaging system allows rapid visualization of electrophoretic separation prior to protein transfer.



Stain-free gel activation and imaging (1 min)



Coomassie-stained gel (overnight staining)



**Fig. 2. Results using a stain-free gel are similar to those using a Coomassie-stained gel.** Criterion TGX Any kD Stain-Free precast gel run at 200 V for 45 min. Stain-free technology is visualized and compared with a gel stained overnight with Bio-Safe™ Coomassie stain.

validate.

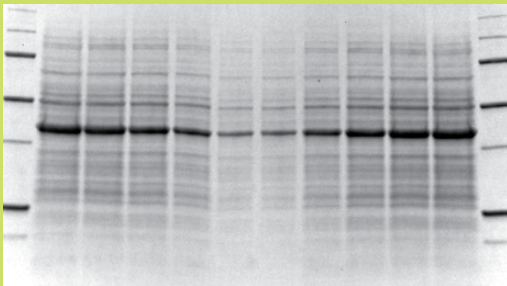
## Transfer Proteins

3

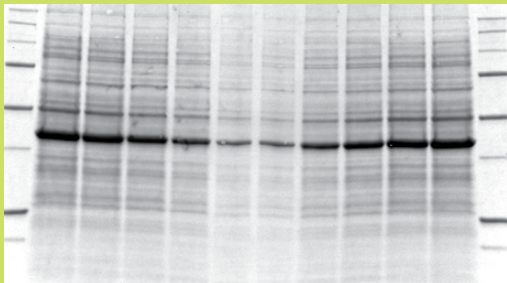
The Trans-Blot® Turbo™ system enables rapid and efficient transfer of proteins across a wide range of molecular weights.

The Trans-Blot Turbo system offers rapid protein transfer efficiency — achieved in as little as 3 minutes — compared to tank blotting.

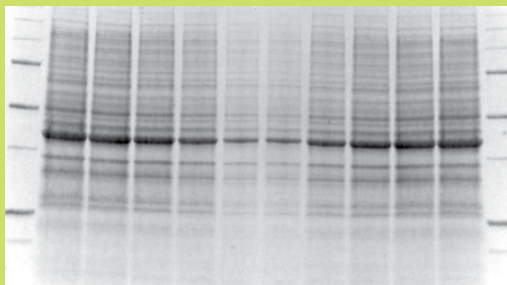
Trans-Blot Turbo system (7 min)



Semi-dry blotting (30 min)



Tank blotting (60 min)



**Fig. 3. Transfer efficiencies are comparable between the Trans-Blot Turbo system and tank blotting.** Transfers were performed with the Trans-Blot Turbo system (7 min), the Trans-Blot SD semi-dry transfer cell (30 min), and by tank transfer (60 min).

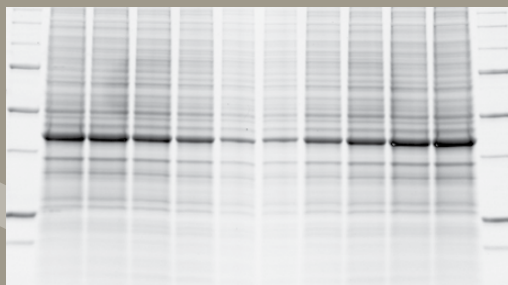
# Verify Transfer

4

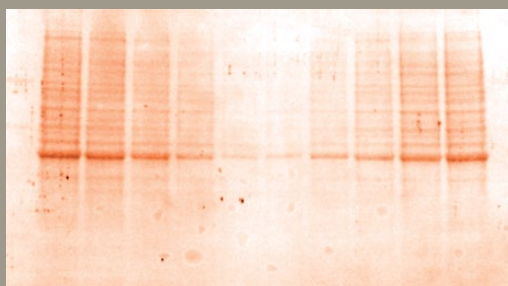
Verify high quality transfer using stain-free technology by instantly imaging the membrane on the GelDoc EZ.

Once stain-free technology is activated during gel imaging, proteins can be visualized on the membrane, allowing instant verification of protein transfer. Ponceau S staining and destaining of the membrane are no longer required.

## Stain-free technology



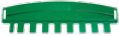





## Ponceau S stain



**Fig. 4. Stain-free technology has a higher protein staining efficiency compared to Ponceau S stain.** Visualization of the previously activated stain-free technology for total protein on a blot compared with a membrane stained with Ponceau S for 1–2 min.






## Ordering Information

### Mini-PROTEAN TGX Stain-Free Precast Gels

Description	 8+1-Well 30 µl	 10-Well 30 µl	 10-Well 50 µl	 12-Well 20 µl	 15-Well 15 µl	 IPG/prep 450 µl
7.5%	456-8029	456-8023	456-8024	456-8025	456-8026	456-8021
10%	456-8039	456-8033	456-8034	456-8035	456-8036	456-8031
12%	456-8049	456-8043	456-8044	456-8045	456-8046	456-8041
Any kD™	456-8129	456-8123	456-8124	456-8125	456-8126	456-8121

All formats are available as both ten packs (catalog numbers listed) and two packs. To order as a two pack, add an "S" to the end of the catalog number for the corresponding ten pack.

### Criterion TGX Stain-Free Precast Gels\*

Description	 12+2**-Well 45 µl	 18-Well 30 µl	 26-Well 15 µl	 Prep+2**-Well 800 µl	 IPG+1**-Well 11 cm IPG Strip
7.5%	567-8023	567-8024	567-8025	—	—
10%	567-8033	567-8034	567-8035	—	—
12%	567-8043	567-8044	567-8045	—	—
18%	567-8073	567-8074	567-8075	567-8072	567-8071
4–15%	567-8083	567-8084	567-8085	567-8082	567-8081
4–20%	567-8093	567-8094	567-8095	567-8092	567-8091
8–16%	567-8103	567-8104	567-8105	567-8102	567-8101
10–20%	567-8113	567-8114	567-8115	567-8112	567-8111
Any kD	567-8123	567-8124	567-8125	567-8122	567-8121

\* Criterion TGX Stain-Free gels are sold as a single gel.

\*\* Reference wells accommodate 15 µl of markers/standards.

Catalog # Description

#### Protein Standards

- 161-0373 **Precision Plus Protein™ All Blue Standards**, 500 µl, mixture of 10 blue-stained recombinant proteins (10–250 kD), including 3 reference bands (25, 50, 75 kD), 50 applications
- 161-0363 **Precision Plus Protein Unstained Standards**, 500 µl, mixture of 10 blue-stained recombinant proteins (10–250 kD), including 3 reference bands (25, 50, 75 kD), 50 applications

#### Buffers

- 161-0732 **10x Tris/Glycine/SDS**, 1 L, 10x premixed electrophoresis buffer, contains 25 mM Tris, 192 mM glycine, 0.1% SDS, pH 8.3 following dilution to 1x with water
- 161-0737 **Laemmli Sample Buffer**, 30 ml, premixed protein sample buffer for SDS-PAGE Electrophoresis Cell

#### Electrophoresis Cell

- 165-6001 **Criterion Cell**, includes electrophoresis buffer tank, lid with power cables, 3 sample loading guides (12+2-well, 18-well, 26-well), instructions
- 165-8004 **Mini-PROTEAN® Tetra Cell for Mini Precast Gels**, 4-gel system includes electrode assembly, clamping frame, companion running module, tank, lid with power cables, mini cell buffer dam.

#### Power Supplies

- 164-5050 **PowerPac Basic Power Supply**, 100–120/220–240 V
- 164-5070 **PowerPac Universal Power Supply**, 100–120/220–240 V

Catalog # Description

#### Blotting System

- 170-4155 **Trans-Blot Turbo Starter System**, Trans-Blot Turbo transfer system and starter kit, includes Precision Plus Protein™ WesternC™ standards, variety transfer pack
- 170-4156 **Trans-Blot Turbo Transfer Pack, Mini, PVDF**, 10 pack
- 170-4157 **Trans-Blot Turbo Transfer Pack, Midi, PVDF**, 10 pack
- 170-4158 **Trans-Blot Turbo Transfer Pack, Mini, Nitrocellulose**, 10 pack
- 170-4159 **Trans-Blot Turbo Transfer Pack, Midi, Nitrocellulose**, 10 pack

#### Imaging System

- 170-8270 **Gel Doc EZ System**
- 170-8274 **Stain-Free Sample Tray**
- 170-8271 **UV Sample Tray**
- 170-8272 **White Sample Tray**
- 170-8273 **Blue Sample Tray**

Please visit [www.bio-rad.com/ad/v3](http://www.bio-rad.com/ad/v3) for more information.

Coomassie is a trademark of BASF Aktiengesellschaft.

Precision Plus Protein standards are sold under license from Life Technologies Corporation, Carlsbad, CA, for use only by the buyer of the product. The buyer is not authorized to sell or resell this product or its components.



**BIO-RAD**

**Bio-Rad  
Laboratories, Inc.**

Life Science  
Group

**Web site** [www.bio-rad.com](http://www.bio-rad.com) **USA** 800 424 6723 **Australia** 61 2 9914 2800 **Austria** 01 877 89 01 **Belgium** 09 385 55 11 **Brazil** 55 11 5044 5699  
**Canada** 905 364 3435 **China** 86 21 6169 8500 **Czech Republic** 420 241 430 532 **Denmark** 44 52 10 00 **Finland** 09 804 22 00  
**France** 01 47 95 69 65 **Germany** 089 31 884 0 **Greece** 30 210 9532 220 **Hong Kong** 852 2789 3300 **Hungary** 36 1 459 6100 **India** 91 124 4029300  
**Israel** 03 963 6050 **Italy** 39 02 216091 **Japan** 03 6361 7000 **Korea** 82 2 3473 4460 **Mexico** 52 555 488 7670 **The Netherlands** 0318 540666  
**New Zealand** 64 9 415 2280 **Norway** 23 38 41 30 **Poland** 48 22 331 99 99 **Portugal** 351 21 472 7700 **Russia** 7 495 721 14 04  
**Singapore** 65 6415 3188 **South Africa** 27 861 246 723 **Spain** 34 91 590 5200 **Sweden** 08 555 12700 **Switzerland** 061 717 95 55  
**Taiwan** 886 2 2578 7189 **Thailand** 800 88 22 88 **United Kingdom** 020 8328 2000