

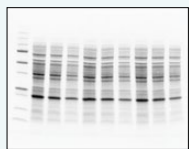


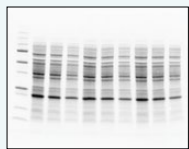

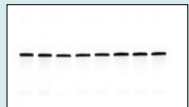
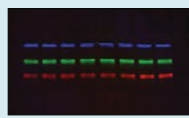
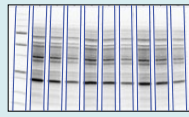


Bio-Rad V3 Western Workflow

Save time, identify problems earlier, and have more confidence in your western blot results.

Compared to conventional methods, this improved workflow, incorporating stain-free gel technology, saves time and increases the accuracy and reliability of your western blot results.

Workflow	Benefit
<p>1 Separate Proteins</p> 	<p>Run four mini or two midi gels in as little as 15 min</p> <ul style="list-style-type: none">Speed with flexibility: TGX Stain-Free Gel chemistry available in precast and handcast formats
<p>2 Visualize Protein Separation</p>   <p>Stain-free image of pretransferred gel</p>	<p>Visualize separation for all lanes in 1 min</p> <ul style="list-style-type: none">Coomassie-like performance with no background variability and no staining/destaining
<p>3 Transfer</p> 	<p>Efficient and uniform protein transfer in 3 min</p> <ul style="list-style-type: none">Throughput: transfer 4 mini or 2 midi gels at onceConvenience: choose from ready-to-use transfer packs (nitrocellulose or PVDF) or ready-to-assemble kits (nitrocellulose, PVDF, or low fluorescence PVDF)
<p>4 Verify Transfer Efficiency</p>   <p>Stain-free image of blot</p>	<p>Quickly assess transfer efficiency</p> <ul style="list-style-type: none">Verify quality of transfer for all lanes in 2 min
Antibody Incubation and Blot Detection ~5 hr	
<p>5 Validate Western Blot Data by Normalization and Analysis</p>   <p>Detect target protein with chemiluminescence</p>  <p>Detect target protein with fluorescence</p>  <p>Stain-free blot (from step 4) for normalization</p>	<p>Easy multiplexing</p> <ul style="list-style-type: none">Use western blot-validated, highly specific PrecisionAb Primary Antibodies and our StarBright Fluorescent Secondary Antibodies to detect multiple targets on the same blot <p>Use stain-free blot image as total protein loading control</p> <ul style="list-style-type: none">No need to strip and reprobe or cut the blotUse all the proteins in the sample to normalize rather than depending on a single housekeeping proteinReliable and accurate quantitation

FAQs

How does stain-free technology work?

The embedded compound in stain-free gels is activated and imaged, post-electrophoresis, by a Bio-Rad imager to provide a fluorescent signal with sensitivity equivalent to Coomassie staining. The stain-free signal transfers with the proteins during blotting, which enables the assessment of transfer efficiency and provides total protein signal for use in normalization.

How do total protein stains compare to normalizing with a housekeeping protein?

Advantages of total protein stains vs. housekeeping normalization include:

1. Housekeeping protein (HKP) expression may change depending on experimental conditions and sample type. Total protein is more stable and less prone to change with experimental conditions.
2. Total protein normalization using stain-free technology eliminates the need to strip and reprobe for housekeeping proteins. Stripping and reprobing for HKP is a very time-consuming process, adding hours to detection, whereas stain-free total protein detection can be done in minutes.
3. Compared to housekeeping proteins, total protein stains exhibit superior linearity and reproducibility.

How does stain-free fluorescence compare to other total protein stains for blots?

Stain-free technology provides higher detection sensitivity and a wider linear dynamic range than available total protein stains. Stain-free technology eliminates staining and destaining manipulation, ensuring proteins remain intact from gel to membrane. Other total protein stains, including Ponceau S and SYPRO Ruby, can introduce errors in the staining/destaining procedure.

What resources are available?

Tips on normalization with stain-free technology are available at Bio-Rad.com.

Bulletin 6434	Western Blot Normalization Using Image Lab Software
Bulletin 6390	General V3 Western Workflow Blotting Protocol
Bulletin 6360	A Method for Greater Reliability in Western Blot Loading Controls: Stain-Free Total Protein Quantitation
Bulletin 6351	Selected Publications: Total Protein Normalization in Western Blotting Using Stain-Free Technology

Tips for good quantitative western blotting are available at Bio-Rad.com.

Bulletin 2895	Protein Blotting Guide
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bio-rad.com/tech/westernblotdoctor

Ordering Information

Catalog # Description

Protein Standards

1610373	Precision Plus Protein All Blue Standards
1610363	Precision Plus Protein Unstained Standards

Buffers

1610732	10x Tris/Glycine/SDS Buffer
1610747	4x Laemmli Sample Buffer

Electrophoresis Cell

1656001	Criterion Cell, includes electrophoresis buffer tank, lid with power cables, 3 sample loading guides
1658004	Mini-PROTEAN Tetra Cell for Mini Precast Gels, 4-gel vertical electrophoresis system, includes electrode assembly, companion running module, tank, lid with power cables, mini cell buffer dam

Blotting System

17001917	Trans-Blot Turbo Transfer Starter System, mini, PVDF
17001919	Trans-Blot Turbo Transfer Starter System, midi, PVDF
17001918	Trans-Blot Turbo Transfer Starter System, mini, nitrocellulose
17001915	Trans-Blot Turbo Transfer Starter System, midi, nitrocellulose
1704156	Trans-Blot Turbo Transfer Pack, mini, PVDF, pkg of 10
1704157	Trans-Blot Turbo Transfer Pack, midi, PVDF, pkg of 10
1704158	Trans-Blot Turbo Transfer Pack, mini, nitrocellulose, pkg of 10
1704159	Trans-Blot Turbo Transfer Pack, midi, nitrocellulose, pkg of 10
1704270	Trans-Blot Turbo RTA Transfer Kit, mini, nitrocellulose
1704271	Trans-Blot Turbo RTA Transfer Kit, midi, nitrocellulose
1704272	Trans-Blot Turbo RTA Transfer Kit, mini, PVDF
1704273	Trans-Blot Turbo RTA Transfer Kit, midi, PVDF
1704274	Trans-Blot Turbo RTA Transfer Kit, mini, low fluorescence PVDF
1704275	Trans-Blot Turbo RTA Transfer Kit, midi, low fluorescence PVDF

Imaging Systems

12003153	ChemiDoc Imaging System
12003154	ChemiDoc MP Imaging System
1708265	ChemiDoc XRS+ System with ImageLab Software

Detection Reagents

1705060	Clarity Western ECL Substrate, 200 ml
1705061	Clarity Western ECL Substrate, 500 ml
1705062	Clarity Max Western ECL Substrate, 100 ml
12004158	StarBright Blue 700 Goat Anti-Mouse IgG, 400 µl
12004161	StarBright Blue 700 Goat Anti-Rabbit IgG, 400 µl
12005866	StarBright Blue 520 Goat Anti-Mouse IgG, 400 µl
12005869	StarBright Blue 520 Goat Anti-Rabbit IgG, 400 µl
12004163	hFAB Rhodamine Anti-Actin Primary Antibody, 200 µl
12004165	hFAB Rhodamine Anti-Tubulin Primary Antibody, 200 µl
12004167	hFAB Rhodamine Anti-GAPDH Primary Antibody, 200 µl

TGX Stain-Free Precast Gels

Description					
	10-Well 30 µl	10-Well 50 µl	12-Well 20 µl	15-Well 15 µl	IPG Well 7 cm IPG Strip
Mini-PROTEAN TGX Stain-Free Precast Gels					
7.5% Resolving Gel	4568023	4568024	4568025	4568026	4568021
10% Resolving Gel	4568033	4568034	4568035	4568036	4568031
12% Resolving Gel	4568043	4568044	4568045	4568046	4568041
4–15% Resolving Gel	4568083	4568084	4568085	4568086	4568081
4–20% Resolving Gel	4568093	4568094	4568095	4568096	4568091
8–16% Resolving Gel	4568103	4568104	4568105	4568106	4568101
Any kD Resolving Gel	4568123	4568124	4568125	4568126	4568121

Description					
	12+2-Well* 45 µl	18-Well 30 µl	26-Well 15 µl	Prep+2-Well* 700 µl	IPG+1-Well* 11 cm IPG Strip
Criterion TGX Stain-Free Precast Gels**					
7.5% Gel	5678023	5678024	5678025	—	—
10% Gel	5678033	5678034	5678035	—	—
12% Gel	5678043	5678044	5678045	—	—
4–15% Gel	5678083	5678084	5678085	5678082	5678081
4–20% Gel	5678093	5678094	5678095	5678092	5678091
8–16% Linear Gradient	5678103	5678104	5678105	5678102	5678101
Any kD Gel	5678123	5678124	5678125	5678122	5678121

* Reference wells accommodate 15 µl of markers/standards.

** Criterion TGX Stain-Free Gels are sold singly.

Visit bio-rad.com/V3 for more information.

TGX Stain-Free Precast Gels are covered by U.S. Patent Numbers 7,569,130 and 8,007,646.

Clarity Max Western ECL Substrate is manufactured by Cyanagen Srl and is the subject of patent application numbers US7855287, EP1950207, US9040252, AU2011202658, CA2742025, US8129136, and EP1962095, together with other equivalent granted patents and patent applications in other countries like CN102313732.

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