

Novex®

Novex®



## Changing the face of westerns

Complete, innovative western workflow solutions



Find out more at [lifetechnologies.com/western](http://lifetechnologies.com/western)

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## Separate, transfer, detect

Forget your past western frustrations. Now you can improve the quality of your western data while simultaneously reducing your time and effort. For each of the three steps of the western workflow, Life Technologies offers high-performance tools and technologies to make the process quick and easy.

### Separate

- **Bolt™ Mini Gel Tank** for easy electrophoresis: an innovative side-by-side tank for clear visualization and faster sample loading
- **Bolt™ and NuPAGE® Bis-Tris Plus Gels** for optimal separation of small- to medium-sized proteins under denaturing conditions. Preserved protein integrity with neutral-pH buffering system



### Transfer

- **iBlot® 2 Dry Blotting System** for self-contained, reproducible, and flexible gel transfer in only 7 minutes: compatible with multiple gel chemistries, membrane types, and gel sizes
- **Bolt™ Mini Blot Module** for seamless transfer in the Bolt™ tank: fits inside the Bolt™ Mini Gel Tank and requires less methanol-based transfer buffer



### Detect

- **iBind™ Western System** for automated western processing: requires no power source or battery. Just load your solutions and allow the sequential lateral flow technology to work for you.
- **Secondary antibodies** for reproducible western blots: specific, sensitive, reliable, and affordable



# Separate

The first step of the western workflow is separation of proteins. Mini precast gels offer convenience, speed, and consistency. The Bolt™ Mini Gel Tank and Bolt™ Bis-Tris Plus gels work together for easy visualization of proteins in a neutral-pH environment.

For a complete listing of all available gels, gel tanks, accessories, and more, visit [lifetechnologies.com/separate](https://www.lifetechnologies.com/separate)

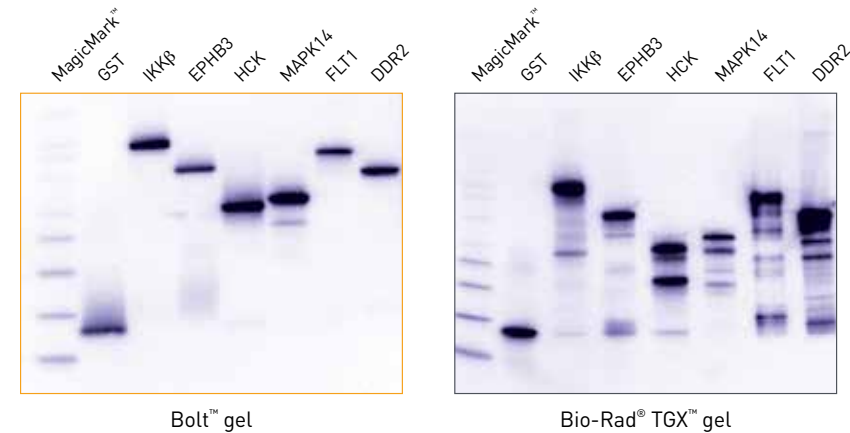
**Bolt™ Mini Gel Tank:** an innovative side-by-side tank for easy visualization and faster sample loading. Its constant voltage allows Bolt™ Bis-Tris Plus gels to be run in about 35 minutes, with a turbo protocol available to run gels in as little as 22 minutes.

- Easy sample loading—with a forward-facing well configuration
- Less running buffer required—two separate gel chambers, so you only need to load sufficient buffer for each gel
- Simultaneous visualization of both gels—streamlined, side-by-side tank configuration
- Simplified monitoring of prestained protein markers—with the white tank stand



Learn more at [lifetechnologies.com/bolt](https://www.lifetechnologies.com/bolt)

**Bolt™ Bis-Tris Plus Gels:** precast polyacrylamide gels designed for optimal separation of a broad molecular weight range of proteins under denaturing conditions. The high-capacity, wedge-well design accommodates 2X higher sample volume loads. Bolt™ gels are designed to deliver western performance superior to that of Tris-glycine-based gels. With the Novex® neutral-pH formulation and mild sample preparation conditions, protein degradation common to Tris-glycine gels is minimized and protein integrity is preserved.



A western blot of a Bolt™ gel shows clean, sharp protein signals corresponding to only full-length proteins, whereas a western blot of a Bio-Rad® TGX™ gel shows multiple low-molecular weight degradation products. Protein kinases implicated in cancer (IKKβ, EPHB3, HCK, MAPK14, FLT1, and DDR2) were analyzed on a Bolt™ Bis-Tris Plus gel and a Bio-Rad® TGX™ Tris-glycine gel.

## Clearly visualize protein separation with pre-stained protein standards

**SeeBlue® Plus2 Pre-stained Protein Standard for protein gels with neutral pH and different chemistry types**

- Optimized for a neutral-pH environment
- Multiple color bands and easy size estimation
- Compatible with Bolt™ Bis-Tris Plus, NuPAGE® Bis-Tris, Tricine, Tris-acetate, and Tris-glycine gels

**HiMark™ Pre-stained Protein Standard for high molecular weight proteins**

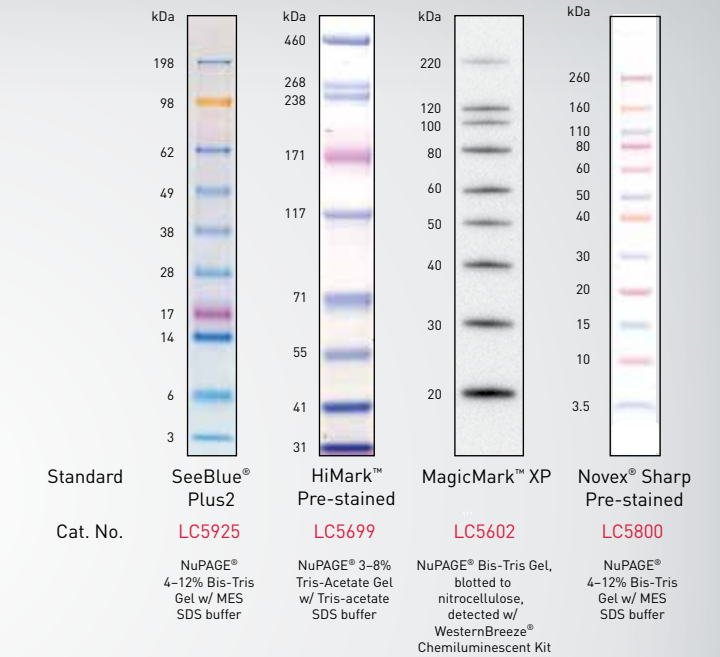
- Comprehensive—9 protein bands in the range of 30–460 kDa
- Convenient—formulation is ready to use
- Compatible with NuPAGE® 3–8% and 7% Tris-acetate gels under denaturing conditions

**MagicMark™ XP Standard**

- Nine proteins ranging in mass from 20 to 220 kDa
- Direct visualization of molecular weight standard bands on western blots with the commonly used immunodetection methods

**Novex® Sharp Pre-stained Protein Standard using 12 separate colors**

- Accurate—sharp bands enable accurate MW estimation
- Clear—each band is pre-stained with a unique color for easy interpretation of results
- Comprehensive—12 proteins in the range of 3.5–260 kDa
- Convenient—formulation is ready to use
- Adaptable—suitable for most gel types, recommended for use with NuPAGE®, Tris-glycine, and Tricine gels



Learn more about protein stains and standards at [lifetechnologies.com/proteinstandards](https://www.lifetechnologies.com/proteinstandards)

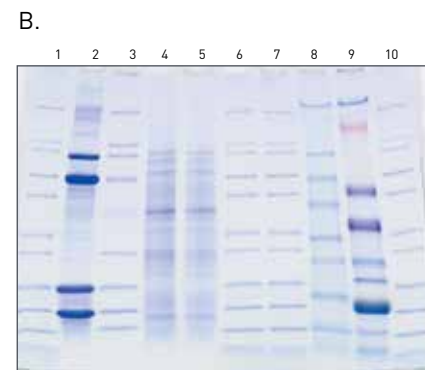
# Separate

For mini and midi gel electrophoresis, the NuPAGE® SDS-PAGE Gel System is referenced in over 20,000 peer-reviewed articles and includes NuPAGE® Bis-Tris gels for small to mid-size molecular weight proteins, NuPAGE® Tris-acetate gels for high molecular weight proteins, and a complete menu of sample and running buffers.

For a complete listing of all available gels, gel tanks, accessories, and more, visit [lifetechnologies.com/separate](https://www.lifetechnologies.com/separate)

The **NuPAGE® SDS-PAGE Gel System**, similar to the Bolt™ system, simulates the denaturing conditions of the traditional Laemmli system (Tris-glycine SDS-PAGE gels) without SDS detergent. NuPAGE® gels use a unique buffer formulation to maintain a low operating pH during electrophoresis, minimizing the “smiles” and poor resolution seen with Tris-glycine SDS-PAGE gels. NuPAGE® Bis-Tris and Tris-acetate gels also offer:

- Superior protein band resolution and stability
- Faster sample run times, at 35–50 minutes
- Long product shelf life—16 months
- More efficient western blot transfer



Protein separation using (A) a Novex® NuPAGE® gel and (B) another manufacturer's traditional Tris-glycine gel.

The **XCell4 SureLock™ Midi-Cell** allows simultaneous vertical electrophoresis of 1–4 midi gels without leaking, enabling consistent performance. It uses proprietary technology to make electrophoresis easier and more reliable than ever, and is designed to dissipate heat effectively and evenly, and enable high-resolution results when using Novex® midi gels.



Learn more about NuPAGE® gels at [lifetechnologies.com/proteingels](https://www.lifetechnologies.com/proteingels)

Learn more at [lifetechnologies.com/surelock](https://www.lifetechnologies.com/surelock)

## PowerEase® 90W Power Supply

The PowerEase® 90W Power Supply is designed specifically for mini gel electrophoresis. The straightforward, intuitive interface makes the powering of DNA and protein gel runs a simple and easy process.

- Constant voltage or current settings
- Built-in timer for walk-away gel electrophoresis
- Output jacks that are compatible with most electrophoresis devices



Learn more at [lifetechnologies.com/powerease](https://www.lifetechnologies.com/powerease)

## Precast gels

Precast gels in a wide variety of percentages, gradients, and number of wells, and the most popular chemistries and running buffers, plus pour-your-own accessories.

A wide variety of options are available to fit your protein separation needs:

- Pre-assembled
- Leak-free empty cassettes for pour-your-own flexibility
- The Novex® Tris-Glycine Express Kit for precast convenience with Laemmli chemistry
- Bolt™ gels with high-volume wedge wells for sensitive western blot analysis
- Legendary NuPAGE® gels for high resolution and long shelf life



Find them all at [lifetechnologies.com/proteingels](https://www.lifetechnologies.com/proteingels)

# Transfer

After proteins have been separated by gel electrophoresis, the next step in the western workflow is to immobilize the proteins on a nitrocellulose or PVDF membrane. Life Technologies offers several gel transfer options: wet, semi-dry, and the 7-minute dry transfer.

Find out more about all of the options at [lifetechnologies.com/transfer](https://lifetechnologies.com/transfer)

## Run and transfer gels in one tank

The Bolt™ Mini Blot Module is a wet transfer device for use with the Bolt™ Mini Gel Tank. The tank accommodates one blot module per chamber, or two blot modules total with the side-by-side layout. This affordable, leak-resistant module requires less transfer buffer than other transfer systems, and the constant resistance across the blotting electrodes helps ensure uniform field strength for highly efficient western transfers.

- Unique gasket seal—helps prevent buffer leakage so there is less mess during setup of your western transfer
- 1/2 inch buffer chamber—requires only half the volume of methanol-based transfer buffer
- Standard 60-minute transfer protocol—accelerates your western workflow so you can get results faster



Learn more at [lifetechnologies.com/bolt](https://lifetechnologies.com/bolt)



The iBlot® 2 Dry Blotting System is designed to deliver self-contained, reproducible, and flexible gel transfer in 7 minutes. No need for buffers or an external power supply, and you don't have to sacrifice efficiency or uniformity.

- Compatible with multiple gel chemistries (Bis-Tris, Tris-glycine, and Tris-acetate) and membrane types (PVDF and nitrocellulose)
- Flexible gel formats: transfer 1 midi or 2 mini gels simultaneously
- Touch screen interface for ease of use

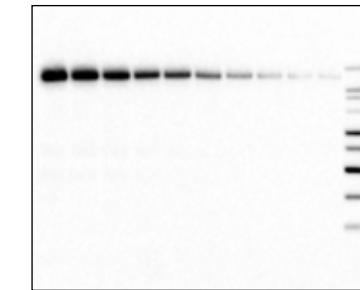
Learn more at [lifetechnologies.com/iblot](https://lifetechnologies.com/iblot)

## Reversible Protein Stain

The Novex® Reversible Protein Stain is a highly sensitive stain used for determining protein transfer efficiency. Quantitative and completely reversible, this stain is compatible for use with both nitrocellulose and PVDF membranes.

Learn more at [lifetechnologies.com/reversiblestain](https://lifetechnologies.com/reversiblestain)

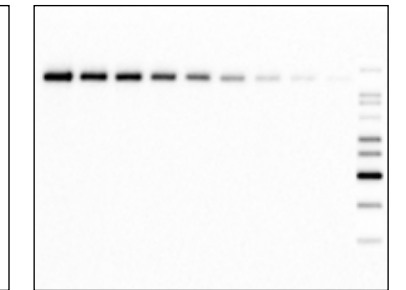
Membranes processed on the iBlot® 2 Dry Blotting System show consistent transfer across various protein gel chemistries to both nitrocellulose (NC) and PVDF membranes. Total cell extracts from A431 cells were transferred to NC membranes from 4–12% Bolt™, 4–12% NuPAGE®, and 4–20% Tris-glycine precast gels (A–C), and also to PVDF membranes from the same types of gels (D–F), using the iBlot® 2 Dry Blotting System.



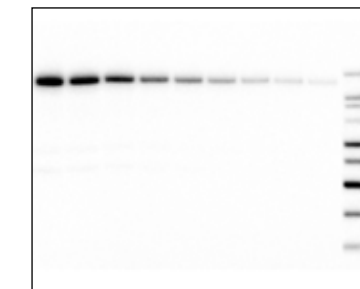
A. Bolt™ NC



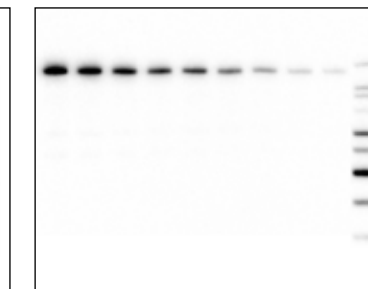
B. NuPAGE® NC



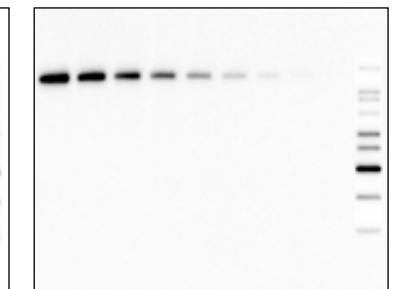
C. Tris-glycine NC



D. Bolt™ PVDF



E. NuPAGE® PVDF



F. Tris-glycine PVDF

# Detect

The last step in the western workflow is detection. In this step, epitope-specific antibodies bind to the protein of interest and, by use of an alkaline phosphatase (AP) or horseradish peroxidase (HRP) tag, allow for visualization of the protein bound to the membrane. Life Technologies offers over 3,500 primary antibodies and over 1,000 secondary antibodies for use in western blot analysis. In addition, the revolutionary iBind™ Western System provides hands-free convenience for primary and secondary antibody binding as well as all wash steps.

Find out more at [lifetechnologies.com/detect](https://lifetechnologies.com/detect)

## Hands-free western blotting

The iBind™ Western System is an automated, hands-free western blotting device that enables more consistent, sensitive, and faster western blots. It employs sequential lateral flow technology, allowing for the timed release of primary and secondary antibodies through mechanical pressure applied from the device to the iBind™ Card. Glass fiber embedded in the iBind™ Card allows the antibody and wash solutions to flow at a constant rate over the western membrane, and a wick attached to one end of the iBind™ Card pulls liquid across the card and membrane. Just load your solutions and walk away.

- All antibody binding and washing steps are automated for you
- No electricity or battery required
- Compatible with HRP- and AP-conjugated antibodies

## Get the right antibodies for western detection

The right antibodies are essential for clean, definitive, reproducible western blot results. We offer over 1,000 highly specific and sensitive antibodies to help achieve quality western data. HRP- and AP-conjugated secondary antibodies are available in various degrees of purity to meet all your western analysis needs.

Novex® antibodies are:

- Specific to the target protein or antibody
- Sensitive to give you the level of detection you need
- Reliable to help you get great data every time
- Affordable to help you get the most out of your research dollar

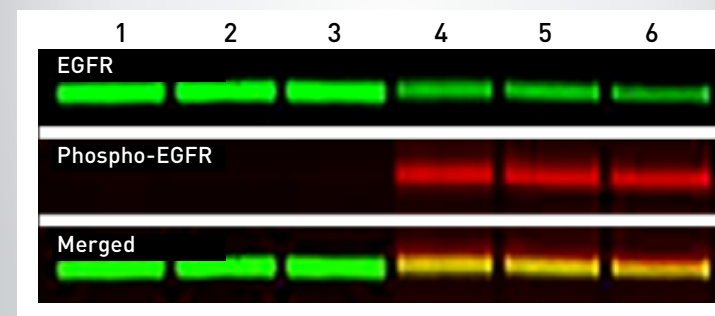


Watch a video demonstration at [lifetechnologies.com/ibind](https://lifetechnologies.com/ibind)

Explore the full catalog at [lifetechnologies.com/western-abs](https://lifetechnologies.com/western-abs)

## Multicolor western analysis

Multicolor western analysis with fluorescent dye or Qdot® nanocrystal conjugates enables the simultaneous evaluation and comparison of multiple proteins on the same blot, even if the proteins co-migrate. Multiplexing also allows easy normalization and requires no blot stripping, or single-blot comparisons, and no additional antibody incubation steps, to help save you time. Alexa Fluor® 680 and 790 along with WesternDot™ 585, 625, 655, and 800 conjugated secondary antibodies are ideal for fast and accurate multicolor western detection.

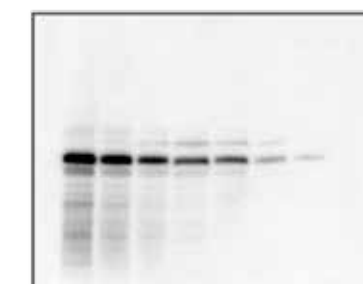


Find them all at [lifetechnologies.com/westerndot](https://lifetechnologies.com/westerndot)

Western blots processed on the iBind™ system show superior sensitivity compared to western blots processed manually. Blots were processed either on the iBind™ system or using standard manual western processing protocols as specified by the antibody manufacturer. **(A–B)** Phosphorylated Akt (left to right: 30 µg–500 ng cell extract load), monoclonal anti-phospho-Akt [Thr308] (C31E5E) primary antibody, HRP-conjugated anti-rabbit secondary antibody. **(C–D)** CREB (left to right: 30 µg–1 µg cell lysate load), polyclonal anti-CREB primary antibody, HRP-conjugated anti-rabbit secondary antibody.

## Phospho-Akt

A. iBind™

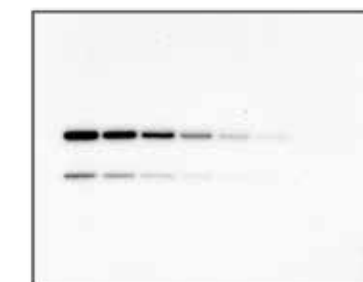


B. Manual



## CREB

C. iBind™



D. Manual



## Ordering information

Product	Quantity	Cat. No.
<b>Separate</b>		
Bolt™ Mini Gel Tank	1 unit	B4477599
Bolt™ Welcome Pack, 10 well	1 kit	B0412A
Bolt™ Welcome Pack, 15 well	1 kit	B0412B
MagicMark™ XP Western Protein Standard	250 µL	LC5602
SeeBlue® Plus2 Pre-stained Protein Standard	500 µL	LC5925
Novex® Sharp Unstained Protein Standard	2 x 250 µL	LC5801
HiMark™ Pre-stained Protein Standard	250 µL	LC5699
Bolt™ Bis-Tris Plus Precast Gels	Varies	Multiple
XCell4 SureLock™ Midi-Cell	1 each	WR0100
NuPAGE® Bis-Tris Precast Gels	Varies	Multiple
NuPAGE® Tris-Acetate Precast Gels	Varies	Multiple
Novex® Tris-Glycine Precast Gels	Varies	Multiple
PowerEase® 90W Power Supply (115 VAC)	1 each	PS0090
<b>Separate and transfer</b>		
Bolt™ Welcome Pack with iBlot® 2 Dry Blotting System	1 kit	B0412AIB2
Bolt™ Tank and Blot Module Combo	1 kit	B2000
<b>Transfer</b>		
iBlot® 2 Gel Transfer Device	1 device	IB21001
Bolt™ Mini Blot Module	1 unit	B1000
Novex® Semi-Dry Blotter	1 each	SD1000
Novex® Reversible Protein Stain	1 kit	IB7710
iBlot® 2 Transfer Stacks, Nitrocellulose, Regular	10 stacks	IB23001
iBlot® 2 Transfer Stacks, Nitrocellulose, Mini	10 stacks	IB23002
iBlot® 2 Transfer Stacks, PVDF, Regular	10 stacks	IB24001
iBlot® 2 Transfer Stacks, PVDF, Mini	10 stacks	IB24002
<b>Detect</b>		
iBind™ Western Starter Kit	1 kit	SLF1000S
iBind™ Western Device	1 device	SLF1000
iBind™ Cards	10 cards	SLF1010
iBind™ Solution Kit	1 kit	SLF1020
Primary antibodies	Over 3,500	Varies
Secondary antibodies for western blot analysis	Over 1,000	Varies

# Customer testimonials

## Bolt™ tank

*“Finally, Bolt came along and the need for good quality western blots for publication has never been higher, our lab head finally saw the light.”*

*“The Bolt system has clear advantages when it comes to ease of well-loading, the speed with which the gel finishes its runs, the amount of buffer needed (less than our other system), and most importantly, the Bolt system consistently produces high-quality bands.”*

## Secondary antibodies

*“The secondary antibody did a great job on our western blot.”*

*“Great antibody with very little if any non-specific binding.”*

## iBlot® system

*“The iBlot has been a great addition to the lab. It is very easy to use, transfers very quickly, and is mess-free with its no-buffer system.”*

*“I remember the days when it took hours to do a western blot. Now with the iBlot, it takes only 7 minutes! You save a ton of time sitting around; instead, you can get on with your experiments/results in less than 10 minutes.”*

## iBind™ western system

*“It’s been years since I’ve seen something so clever. Wow, it could make my life easier.”*

*“Students love the iBind because of how easy it is to use. I like it because it doesn’t require much training and allows them to use fewer consumables.”*

