Simple Western
Product Brochure

THE SIMPLE WAY TO

Your Next Breakthrough

Evolve Your Protein Analysis with Simple Western Systems

Move Beyond Traditional Western Blots

Protein analysis comes with many challenges—labor-intensive protocols increase time to result, and multiple hands-on steps increase user error and data variability. At best, you end up with semi-quantitative results when what you really need, and deserve, is highly reproducible immunoassay quantitation. Discover more and solve your protein analysis problems with Simple Western™ Systems.

Explore Automated Western Blotting

Scan the QR Code:
bio-techne.com/instruments/simple-western

Meet Simple Western Systems

- Identify whether a protein is present or absent
- Quantitate protein expression changes
- Identify and analyze phosphorylated isoforms
- Characterize post-translational modifications
- Normalize target expression to protein load
- Delve deeper into isoform analysis with charge separation

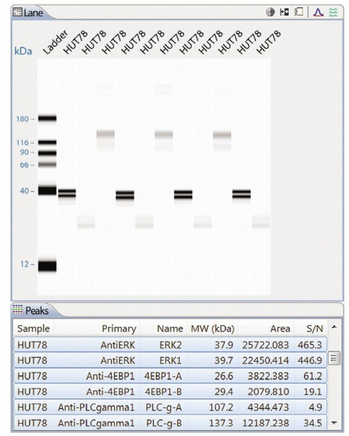
What Does the Data Look Like?

Simple Western size-based assay data is processed automatically in **Compass™ for Simple Western™ Software** for you. Sample data is displayed by lane in a virtual-blot like image similar to traditional results with one big exception—not only do you get more information, you get it as soon as the assay is complete. Quantitative results such as molecular weight, signal intensity (area), % area, and signal-to-noise for each immunodetected protein are presented in the results table automatically.

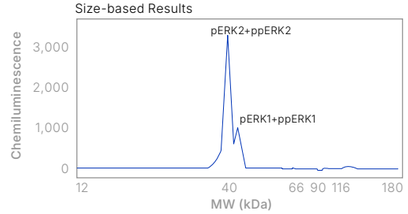
For those who are more accustomed to capillary electrophoresis, we offer traditional electropherogram view that allows you to visualize your results with ease.

Just need total protein? We've got that covered too!

FIGURE // 01



Sample	Primary	Name	MW (kDa)	Area	S/N
HUT78	AntiERK	ERK2	37.9	25722.083	465.3
HUT78	AntiERK	ERK1	39.7	22450.414	446.9
HUT78	Anti-4EBP1	4EBP1-A	26.6	3822.383	61.2
HUT78	Anti-4EBP1	4EBP1-B	29.4	2079.810	19.1
HUT78	Anti-PLCgamma1	PLC-g-A	107.2	4344.473	4.9
HUT78	Anti-PLCgamma1	PLC-g-B	137.3	12187.238	34.5



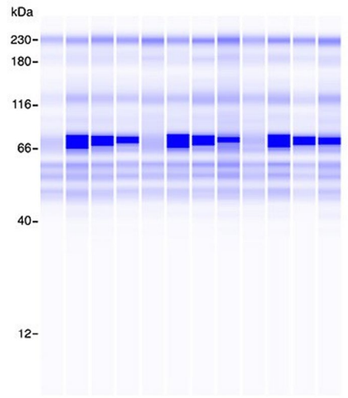


FIGURE 1. Total Protein detection. Decreasing concentrations of DNAK in Hela lysate and negative controls (15, 7.5 & 3.75 µg/mL).

How Can Simple Western Technology Help You?

The Simple Western Advantage

Fast and Fully Automated

With **Simple Western Systems**, it's pipette, run and done! Simply load your sample, antibodies and reagents into the plate, insert your plate and cartridge into the Simple Western Instrument instrument and press start. With as little as 3 hours of hands-free run time, you can be analyzing data and making decisions with your data in no time.

Highly Sensitive Multiplex

Get pico-gram level sensitivity in chemiluminescence and fluorescence channels and the advantage of **flexible multiplex assays** including total protein normalization of immunoassay results.

Low Sample volume

Use as little as 3 µL of sample per well so you can save your precious samples and maximize data from each sample.

Reproducible

By eliminating the variability from manual steps of traditional western blotting protocols including sample loading, gel-to-membrane transfer of proteins, and user and site differences, Simple Western technology is highly reproducible offering <15% intra-assay CVs.

Quantitative

With Simple Western Systems, protein quantitation is a breeze. With 25 or 100 independent sample throughput per run, Simple Western enables inclusion of standard curves, QC standards, and controls to design robust **fully quantitative protein assays**.

Differentiate

Simple Western charge assays enable the identification of charge isoforms such as mono- or di-phosphorylated states of your target protein. Get another dimension to your data beyond size.

How Simple Western Works

01

Prepare Your Reagents

Reagent prep with Simple Western System isn't complicated. Pipette, mix, spin...Soon you'll be a protocol prodigy.

02

Load the Plate

After preparing the reagents, simply load the reagents and samples into a Simple Western Sample Plate.

03

Start the Run

Place the Sample Plate, any additional Pre-filled Reagent Plate(s) needed and the capillary cartridge(s) into the Simple Western Instrument and use Compass Software to start a run. Walk away and take back your lost time.

04

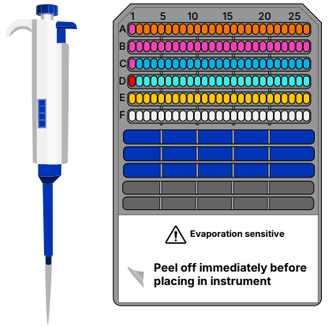
Your Simple Western System Does the Rest

Simple Western System analyze proteins through separation and immunoprobing in a capillary-based system. Each step of the process is precisely controlled, ensuring the highest quality results. Come back to fully analyzed, quantitative results.

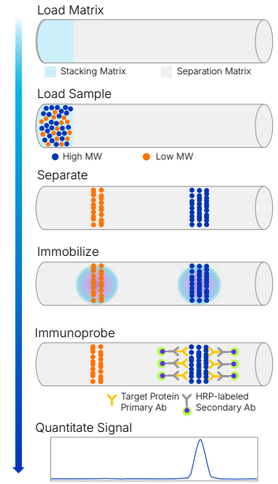
Rethink, Reuse, RePlex™

Scan the QR Code or Click the Link to Learn More:
bio-techne.com/replex

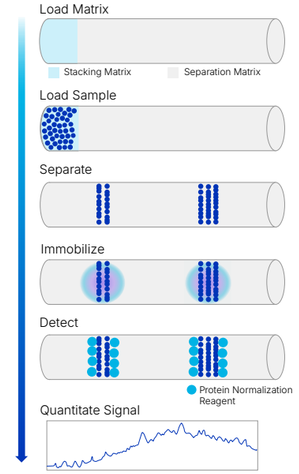
It's pipette, run & done! Simple Western does the rest.



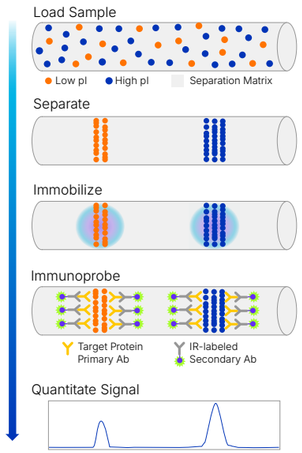
Sized-Based Assay:
Chemiluminescent Detection



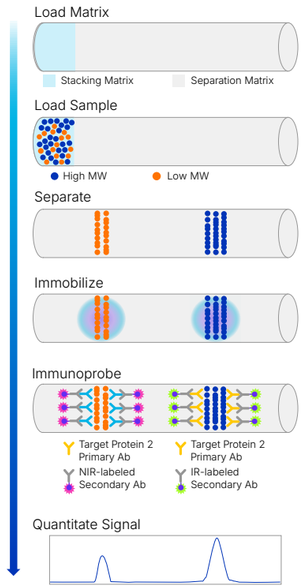
Sized-Based Assay: Fluorescent Protein Normalization



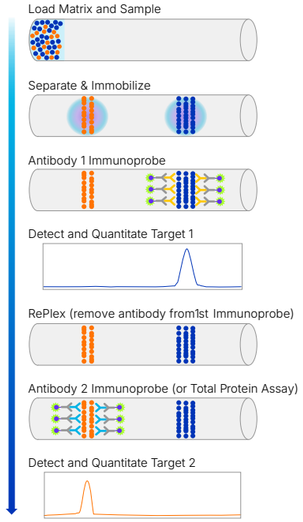
Charge-Based Assay:
Chemiluminescent Detection



Sized-Based Assay:
Fluorescent Detection



Replex Assay
with Leo, Jess & Abby



Stop, Analyze, & Wow!

At the end of your run, you'll have multiple options for data viewing. For size-based runs, use the laneview option to compare band intensity like in traditional Western blotting (FIGURE 2) or view the electropherogram of the protein separation by size and intensity (FIGURE 3). Easily turn these qualitative views into fully quantitative tables or standard curves to dive deeper into quantitative analysis, allowing you to compare protein expression changes and analyze protein isoforms or size changes (TABLE 1).

With **NanoPro 1000™ System**, distinguish phosphorylation changes in proteins using the cIEF separation. View your results in electropherogram format and take your analysis further by examining the signal intensities across the isoelectric point (pI) range (FIGURE 4).

FIGURE // 02

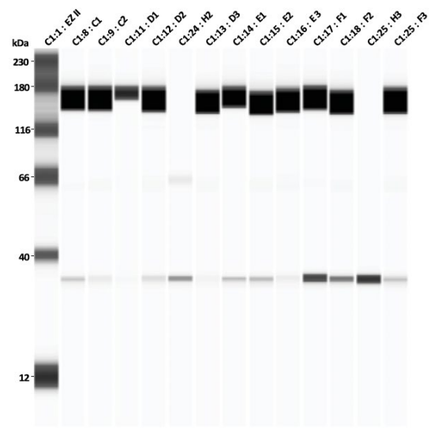


FIGURE 2. The virtual lane view option in Compass Software for Simple Western Technology lets you compare protein separation and band intensity, like in traditional western blotting.

Want to analyze expression changes between samples or compare runs? Choose either a chemiluminescence-based Total Protein Module or fluorescence-based Protein Normalization kit to normalize your immunoassay data so you can have the confidence you need in your analysis.

Use RePlex™ Assay with **Leo™**, **Jess™** and **Abby™** Systems to run two serial immunoassays within the same capillary so you can quantify expressed phosphorylated target and total target levels.

Get all your rich protein characterization data from just one sample!

FIGURE // 03

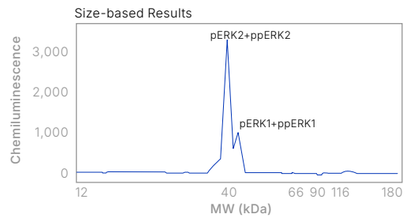


FIGURE 3. Electropherogram graph view of protein separation by size and intensity in Compass for Simple Western Software.

FIGURE // 04

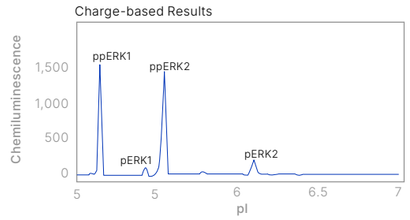


FIGURE 4. Electropherogram graph view of charge-based Simple Western assay data using NanoPro 1000 System. Distinguish protein isoforms like phospho-protein isoforms (shown here) separated by their isoelectric point.

TABLE // 01

Sample	Primary	Cap	Peak	Position	MW (kDa)	Height	Area	Width	S/N	Baseline
C1	anti-G...	C1:8	1	430	34	1844.8	17439	8.9	94.1	178.1
C1	anti-G...	C1:8	2	601	159	45597.5	537092	11.1	2331.9	255.7
C2	anti-G...	C1:9	1	430	34	1119.1	13081	11.0	87.8	186.4
C2	anti-G...	C1:9	2	519	63	531.1	7662	13.6	34.5	219.0
C2	anti-G...	C1:8	3	601	159	57978.6	653486	10.6	4672.4	281.1

TABLE 1. Compass for Simple Western Software automatically calculates fully quantitative results for each peak detected in your sample and even has a built-in standard curve tool to calculate absolute protein expression levels.

Simple Western Systems:
Pick your Perfect Match

LEO

- Size-based protein analysis
- Up to 100 samples per run
- Fully analyzed results in 3 hours of run time
- Chemiluminescence detection
- RePlex assay
- Chemi-based in-cap total protein normalization

JESS

- Size-based protein analysis
- 13 or 25 samples per run
- Fully analyzed results in 3 hours of run time
- Chemiluminescence & Fluorescence detection
- RePlex assay
- Two approaches for in-cap total protein normalization: fluorescence-based Protein Normalization or chemiluminescence-based Total Protein Assay
- Stellar High Sensitivity NIR/IR detection

ABBY

- Size-based protein analysis
- 13 or 25 samples per run
- Fully analyzed results in 3 hours of run time
- Chemiluminescence detection
- RePlex assay
- Chemi-based in-cap total protein normalization

NANOPRO 1000

- Charge-based analysis
- 96 samples per run
- Fully analyzed results in 11-19 hours of run time
- Chemiluminescence detection

Specifications

Instrument Specifications

System	Leo	Jess	Abby	NanoPro 1000
Simple Western size assays	•	•	•	
Simple Western charge assays				•
Max samples per run	100	25	25	96
Run time	<3 hours	<3 hours	<3 hours	11-19 hours
Minimal sample volume required	3-5 µL/well	3 µL/well	3 µL/well	5–12 µL/well
Sample cooling	N/A	N/A	N/A	3° C
Detection	Chemiluminescence	Chemiluminescence Fluorescence	Chemiluminescence	Chemiluminescence
RePlex™ (Strip & ReProbe Replacement)	Yes	Yes	Yes	No
Stellar™ (NIR / IR fluorescence detection)	No	Yes	No	No
Dimensions (H x W x D)	72 x 74 x 74 cm	33 x 33 x 52 cm	33 x 33 x 52 cm	94 x 94 x 61 cm
Weight	136 kg	23 kg	21 kg	82 kg
Part Number	004-550	004-650	004-680	004-109

Imunoassay Specifications

Immunoassay Size Specification				
Description	**Chemiluminescence on Abby & Jess**	**Stellar Fluorescence on Jess**	**Classic Fluorescence on Jess**	**Immunoassay Charge**
Sample required	0.6–1.2 µg	0.6–1.2 µg	2–4 µg	0.6–1.2 µg
Volume required	3 µL/well	3 µL/well	3 µL/well	5–12 µL/well
Size range	Molecular weight (MW) ladders range from 2–440 kDa	Molecular weight (MW) ladders range from 2–440 kDa	Molecular weight (MV) ladders range from 2–440 kDa	Widest gradient ranges from pI 3 to pI 10
Sizing CV	<10%	<10%	<10%	<10%
Intra-assay CV	<15%	<15%	<15%	<20%
Inter-assay CV	<20%*	<20%*	<20%*	<20%**
Resolution (± percent difference in MW)	± 15–20% for MW <20 kDa ± 10%	± 15–20% for MW <20 kDa ± 10%	± 15–20% for MW <20 kDa ± 10%	± 1 pI units
Quantitation CV	<20%	<20%	<20%	<20%
Dynamic range	Up to 4 logs	Up to 4 logs	Up to 4 logs	3 logs
Sensitivity	Low pg	Low pg	Low pg	Low pg

* Inter-assay CV is with system control
** Percent peak area

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Global Developer, Manufacturer, and Supplier of High-Quality Reagents, Analytical Instruments, and Precision Diagnostics.

INCLUDES R&D Systems™ Novus Biologicals™ Tocris Bioscience™ ProteinSimple™ ACD™ ExosomeDx™ Asuragen® Lunaphore™

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