

YOUR COMPLETE PROTEIN ANALYSIS SOLUTION



MEET JESS.



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 Western blot-like, semi-quantitative results when what you really need, and deserve, is highly reproducible immunoassay quantitation.

Meet **Jess**, your protein analysis problem solver. Jess automates the protein separation and immunodetection of traditional Western blotting, eliminating many of the tedious, error-prone steps. Just load your samples and reagents into the microplate, and Jess does the rest. She separates your protein by size and precisely manages antibody additions, incubations, washes and even the detection steps. Come back to fully analyzed and quantitated results in just 3 hours. With Jess's chemiluminescent detection you'll get picogram-level sensitivity, letting you maximize the data you get from your sample. Go further with high sensitivity—best in class fluorescence detection gets all the information you need in one shot. Best of all, you get reliable and reproducible results with target normalization to the amount of protein loaded.

Analysis is a breeze. Want to identify whether a protein is present or absent? Jess gives you the qualitative Western blot data you are used to seeing. Even better, she'll quantitate the results for you too. With just a few clicks you'll be analyzing immunoassay-like standard curves and precisely quantifying your protein. Jess, she's like Western blot meets ELISA in one.

HOW CAN JESS HELP YOU?



REPRODUCIBLE

Jess precisely controls sample loading, incubations and washes; she eliminates the inconsistencies and user-dependent variability that can be introduced during traditional Westerns. She delivers intra-assay CVs <15%, giving you the consistency you need to be confident in your data.



HIGH THROUGHPUT

With her 13 and 25 sample capillary cartridges, you'll get the throughput you need, with minimum hands-on time. Use Jess's fluorescent capabilities and **multiplex** your proteins for even higher throughput.



FAST

With Jess, it's pipette, run and done! Simply load your sample, **antibodies** and reagents into the plate, insert your plate and cartridge into Jess and press start. In just 3 hours of hands-free runtime, you can be analyzing data for your next publication or grant.



QUANTITATIVE

With Jess, protein quantitation is a breeze. At the conclusion of your run, use the lane view option to compare band intensity or dive deep for fully quantitative analysis of protein size and concentration. With a few clicks, you'll be analyzing immunoassay-like standard curves and precisely quantifying your protein.



WHY SETTLE? DO PROTEIN ANALYSIS YOUR WAY, QUICKLY.

JESS GIVES YOU FOUR DIFFERENT WAYS TO ANALYZE PROTEINS.

1 FLUORESCENCE DETECTION

Why bother stripping and reprobing? Maximize your time and sample using Stellar NIR/IR modules for market-leading fluorescent detection sensitivity.

2 CHEMILUMINESCENCE DETECTION

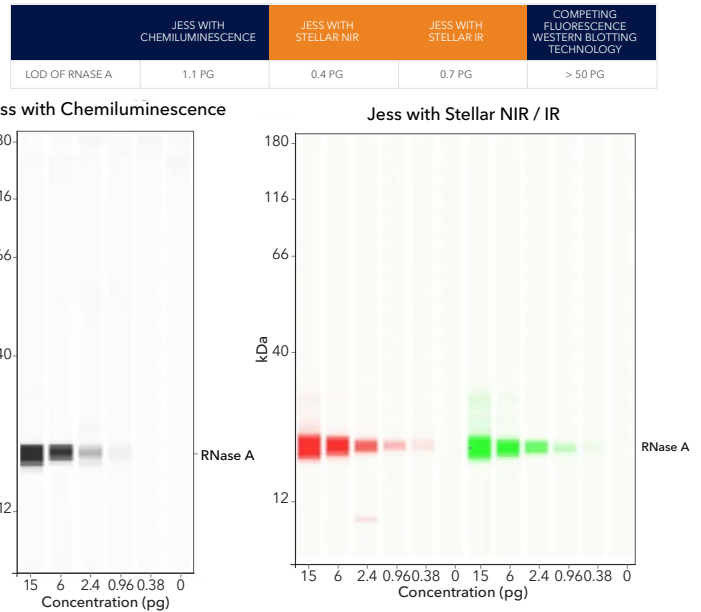
Working with low abundance targets or precious samples? Chemiluminescent detection gives you picogram-level sensitivity, letting you maximize the data you get from your sample.

3 PROTEIN NORMALIZATION

Jess gives you an easy way to see if your samples contain a consistent protein load: either use her proprietary fluorescent protein normalization reagent or total protein reagent in a [RePlex](#) assay to measure proteins immobilized in the same capillary as your immunoassay. Best of all, Jess's multiple detection capabilities enable two-color protein detection for multiplexing and chemiluminescent detection, on top of protein normalization.

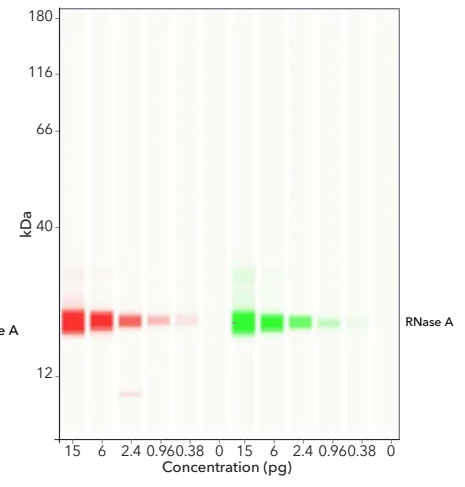
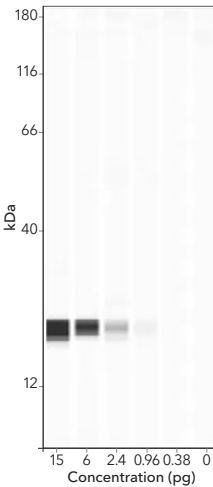
4 BLOT IMAGING

Still doing traditional Westerns? Snap! Get the picture with Jess's blot imaging system.

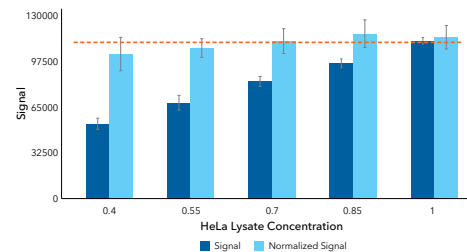


Jess with Chemiluminescence

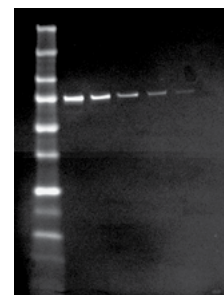
Jess with Stellar NIR / IR



Stellar NIR/IR fluorescence offers comparable sensitivity to Simple Western chemiluminescence and higher sensitivity than competing traditional fluorescence western blotting approaches. Comparison of limit of detection for RNase A on Jess using chemiluminescence and Stellar NIR (red bands) and Stellar IR (green bands) detection modules with a leading competitor Western blot fluorescence imaging system. Jess with Stellar fluorescence detected RNase A down to 0.4pg which is comparable to sensitivity achieved with chemiluminescence detection using Jess (1.1 pg). Linear regression analysis of all Jess results had R2 values >0.99 (see [app note](#) for data). Jess with Stellar fluorescence demonstrated 100X greater detection sensitivity than the closest competitive traditional Western blot fluorescence imaging system (data not shown).



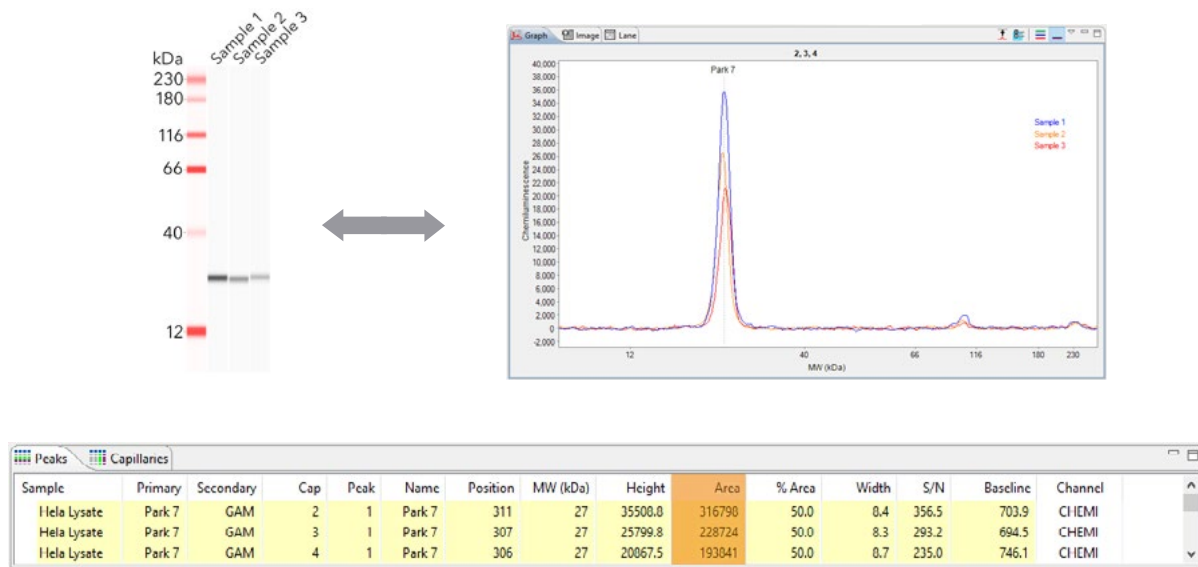
With fluorescent protein normalization, you can take your protein load comparison and transform your data to effectively normalize your samples, increasing your confidence in your data interpretation.



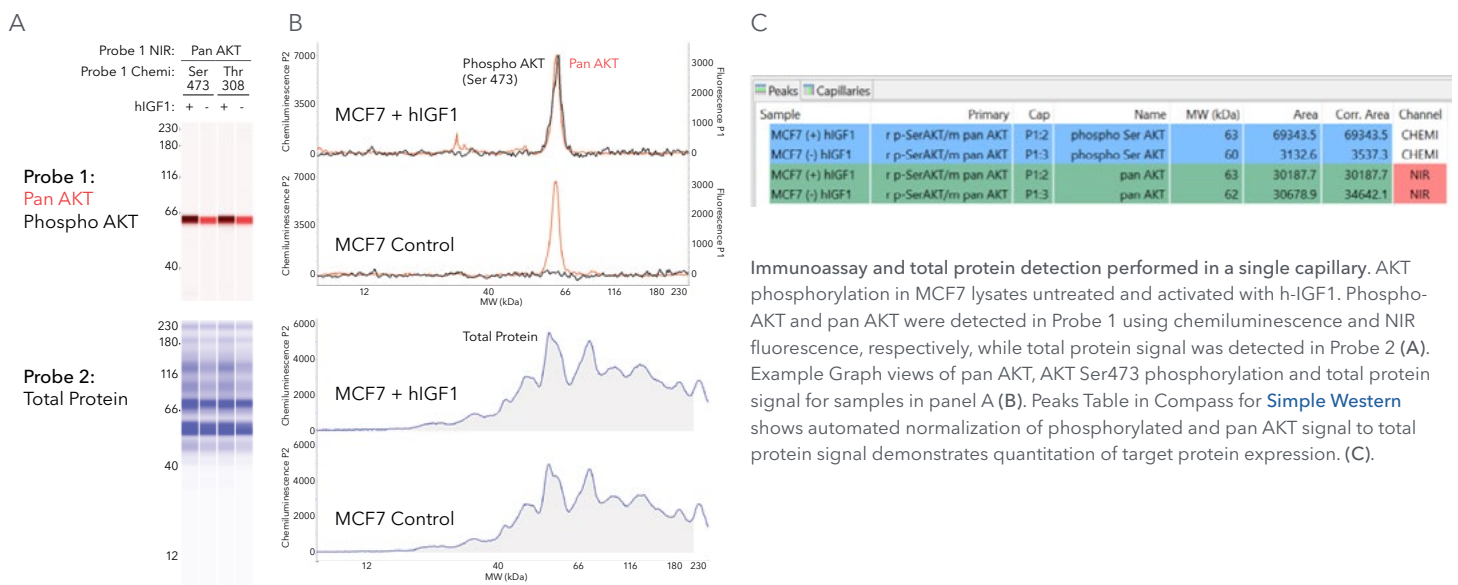
Jess's imaging system allows for imaging of traditional Western blotting membranes.

STOP, ANALYZE AND WOW!

At the end of your run, use the lane view option to compare band intensity or dive deep for fully quantitative analysis of **Protein Size** and concentration. Dive deeper to compare protein expression changes and analyze protein isoforms or size changes. Want to analyze expression changes between samples or compare runs? Jess's protein normalization will give you the confidence you need in your analysis.

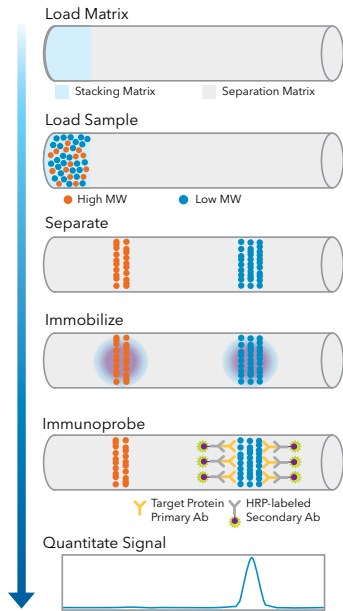


AUTOMATED IMMUNOASSAYS AND TOTAL PROTEIN NORMALIZATION EQUALS BETTER QUANTIFICATION

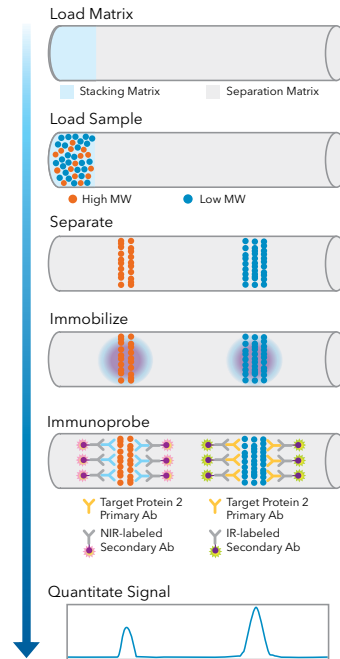


HOW DOES JESS WORK?

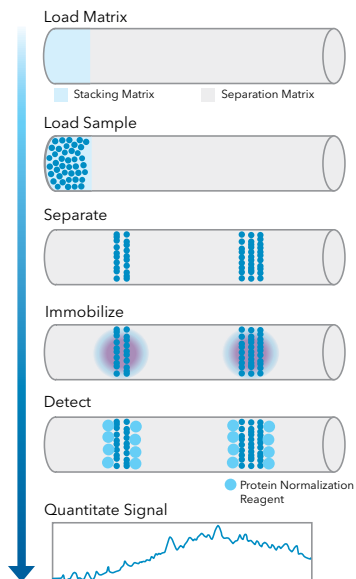
CHEMILUMINESCENT DETECTION



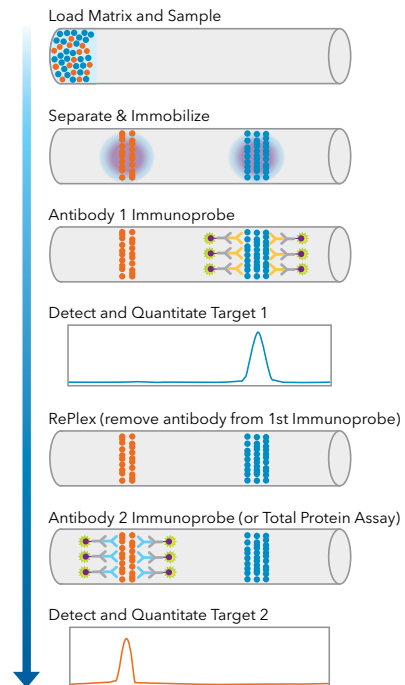
FLUORESCENT DETECTION



FLUORESCENT PROTEIN NORMALIZATION



REPLEX™ WITH JESS™



SPECIFICATIONS

| DESCRIPTION | TOTAL PROTEIN SPECIFICATION | CHEMILUMINESCENCE SPECIFICATION | FLUORESCENCE SPECIFICATION | PROTEIN NORMALIZATION SPECIFICATION |
|---|--|---------------------------------|----------------------------|-------------------------------------|
| Sample required | 0.3-1.2 µg | 0.6-1.2 µg | 2-4 µg | 0.6-3.6 µg |
| Volume required | 3 µL/well | | | |
| Size range | Molecular weight (MW) ladder ranges from 2-440 kDa | | | |
| Sizing CV | <10% | | | |
| Intra-assay CV | <15% | | | <20% |
| Inter-assay CV | <20%* | | | 20%† |
| Resolution (± percent difference in MW) | ± 15-20% for MW <20 kDa ± 10% for MW >20 kDa | | | |
| Quantitation CV | <20% (total protein, chemiluminescence and fluorescence) | | | N/A |
| Dynamic range | 2-3 logs | 3-4 logs | 4 logs | 1 log |
| Sensitivity | ng | Low pg | Low pg | ng |
| Capillary | 5 cm, 100 µm, 400 nL | | | |
| Runtime | <3 hours RePlex: 5 hours | | | <4 hours with immunoassay |
| Samples per run | 13 or 25 | | | |
| Weight | 23 kg | | | |
| Dimensions (closed) | 0.36 M H X 0.3 M W X 0.57 M D | | | |
| Dimensions (open) | 0.36 m H x 0.53 m W x 0.57 m D | | | |
| Power | US/CAN 120 V AC, 60 Hz, 4.2 amps Europe 240 AC, 50 Hz, 2.1 amps Japan 100 AC, 50/60 Hz, 5.0 amps | | | |
| Operating temperature | 18-24 °C | | | |
| Operating humidity | 20-60% relative, non-condensing | | | |

* Inter-assay CV is with system control

† Percent peak area

WHERE SCIENCE INTERSECTS INNOVATION™

At ProteinSimple, we're changing the way scientists analyze proteins. Our innovative product portfolio helps researchers reveal new insight into proteins, advancing their understanding of protein function. We enable cutting-edge research to uncover the role of proteins in disease and provide novel approaches to develop and analyze protein-based therapeutics. We empower you to make your next discovery by eliminating common protein analysis workflow challenges.

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