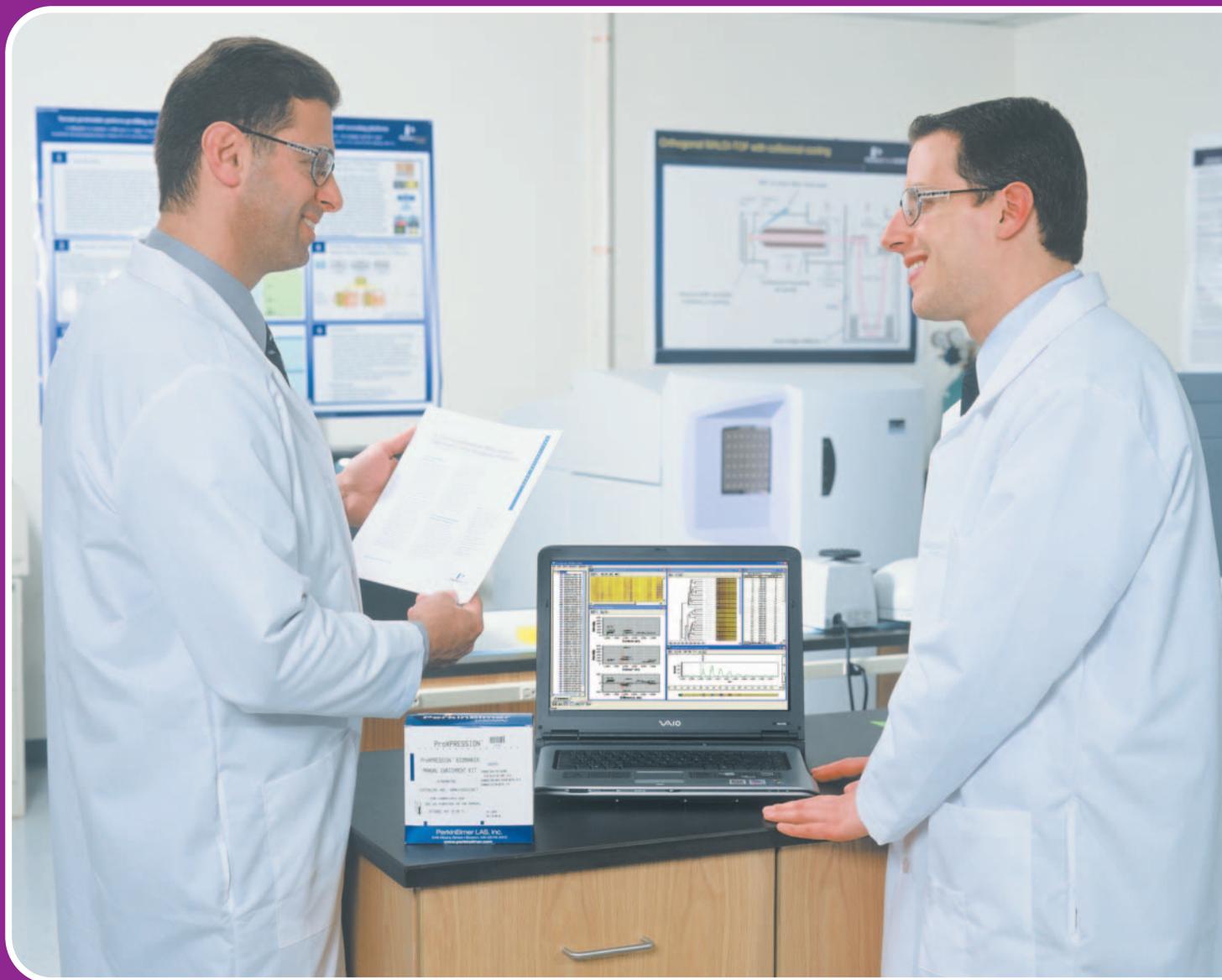


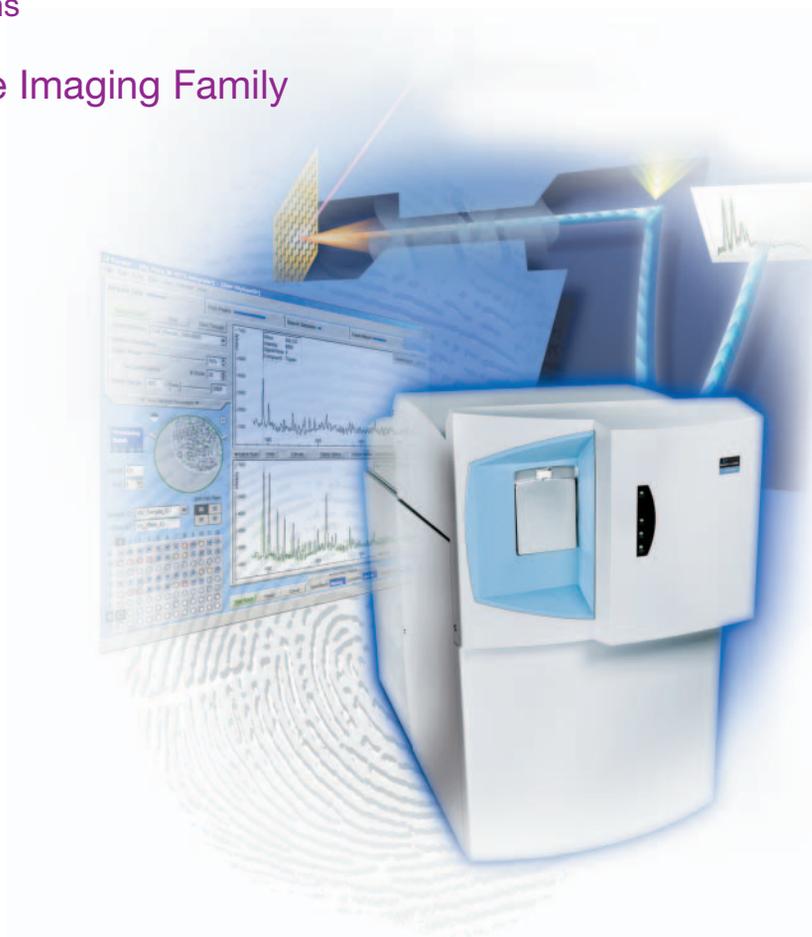
# Proteomics & Biomarker Discovery



The potential of protein biomarkers as early indicators of disease, early warnings of drug toxicity and to monitor drug efficacy and effects is well known. PerkinElmer's powerful BioXPRESSION™ Biomarker Discovery and Validation Platform and ProXPRESSION™ biomarker enrichment technology support your research from sample enrichment to biomarker discovery, validation, identification and sequencing.

# Contents

Technology Showcase: BioXPRESSION Biomarker Discovery & Validation Platform	271
ProXPRESSION Kits for Biomarker Enrichment	273
ProXPRESSION Biomarker Enrichment Kits	273
ProXPRESSION Biomarker Ion Elution Kits	273
ProXPRESSION Basic & Acidic Protein Enrichment Kits	274
BioXPRESSION Platform Accessories	274
ProXPRESSION MALDI Standards Kit	274
ProXPRESSION MALDI Calibration Kit	274
MALDIchip Single-Use Targets	275
Western Blot Detection & Protein Stains	275
ProXPRESSION Dichromatic Western Blot Kits	275
Western Lightning Chemiluminescence Reagents	276
Protein Stains	276
The Geliance Imaging Family	277



## BioXPRESSION Biomarker Discovery & Validation Platform



Biomarker Enrichment		Biomarker Discovery & Validation		Identification & Sequencing
<p><b>Novel biomarker enrichment technology</b></p> <p>Our ProXPRESSION Kits let you easily and rapidly purify complex biological/protein samples.</p> <ul style="list-style-type: none"> <li>• Novel, carrier protein-based biomarker enrichment.</li> <li>• Optimized capture and recovery of low abundance protein and peptide species.</li> <li>• Efficient and reproducible micro-scale fractionation protocols.</li> <li>• Choice of low-medium or high volume kits.</li> </ul>	<p><b>Throughput, efficiency and precision with automation</b></p> <p>Our JANUS™ Automated Workstation delivers efficient, precise automation of any sample prep procedure.</p> <ul style="list-style-type: none"> <li>• Innovative Modular Dispense Technology™ (MDT) for true “on-the fly” adaptability in volume range from nL to mL and microplate well density up to 1536 wells.</li> <li>• Walk-away automation protocols.</li> <li>• 4-, 8-, 96- and 384-tip models.</li> <li>• Advanced sample tracking for seamless transfer of sample data from JANUS to MS.</li> </ul>	<p><b>Accurate, high-throughput detection</b></p> <p>Our prOTOF 2000® MALDI O-TOF mass spectrometer is a revolutionary MALDI orthogonal time-of-flight MS to accelerate your proteomics research.</p> <ul style="list-style-type: none"> <li>• Patented, orthogonal design and collisional cooling provides better mass discrimination.</li> <li>• No internal calibration required.</li> <li>• Mass accuracy of 1–2 ppm.</li> <li>• Sub-femtomole detection for greater dynamic range.</li> <li>• Wide mass range, collects data from 100 Da – 300 KDa in a single acquisition.</li> </ul>	<p><b>Powerful discriminant analysis*</b></p> <p>The Progenesis™ Nonlinear PG600 Biomarker Analysis Software is a major advance in analytical tools, providing complete control over data alignment, peak detection, differentiation of groups and clustering.</p> <ul style="list-style-type: none"> <li>• Fully automated data handling.</li> <li>• Intelligent peak detection.</li> <li>• Range of spectra display options.</li> <li>• Rapid identification of data clusters using dendrograms.</li> <li>• Grouping and averaging of traces according to sample class.</li> </ul> <p><i>*From Nonlinear Dynamics® Ltd.</i></p>	<p><b>Expert peptide biomarker de novo sequencing</b></p> <p>Use our Biomarker Identification and Sequencing Service and let PerkinElmer's partners sequence and identify your putative biomarkers with state-of-the-art analytical tools and procedures.</p> <ul style="list-style-type: none"> <li>• Definitive, high sensitivity protein identifications using cutting-edge analytical instrumentation, robotics and de novo sequencing.</li> <li>• Samples processed in a keratin-free HEPA-filtered environment.</li> <li>• Clients retain ownership of all data.</li> <li>• Complete confidentiality.</li> <li>• Comprehensive project consultation.</li> </ul>

# BioXPRESSION

## Biomarker Discovery & Validation Platform

An **exciting new paradigm** in proteomics

Now your laboratory can rapidly screen thousands of samples with the highest discriminating power and obtain high confidence results for your research.

PerkinElmer has joined forces with industry innovators Sartorius and Nonlinear Dynamics to offer a **complete solution for biomarker discovery** that lets you effectively study population segmentation, assess pre-clinical trial data and conduct disease profiling.

The BioXPRESSION Biomarker Platform combines four leading technologies:

- High throughput, automated, carrier-protein biomarker enrichment with novel membrane chromatography
- Liquid handling automation
- High resolution mass spectrometry detection
- Powerful, dedicated biomarker analysis capability

**Ignite your biomarker research capabilities with the powerful BioXPRESSION Biomarker Platform for discovery and analysis**

**Reduce sample complexity with ProXPRESSION Protein Enrichment Kits**

Reproducible sample complexity reduction is an essential first step in biomarker discovery experiments. ProXPRESSION Kits enable efficient, reproducible, microscale fractionation for complex protein mixtures using patented membrane adsorber (MA) chromatography technology (Sartorius AG) combined with PerkinElmer's proprietary buffers and elution chemistries. Our ProXPRESSION kits are available in Acidic, Basic, Biomarker Enrichment or Ion Elution formats (see Figs. 1 & 2). Please refer to pp. 273–274 of this catalog for further details.

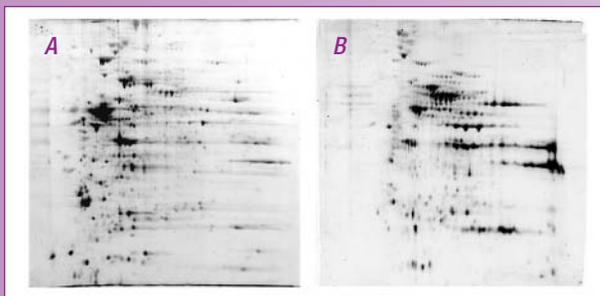


Figure 1. Application of ProXPRESSION Basic Protein Enrichment Kit to human neocortical brain tissue. Many protein spots were enriched, as evident in comparison of the 2-D gels prior to (A) and after fractionation (B). Approximate range of proteins: 6–200 kDa, pI 6.0–10.0.

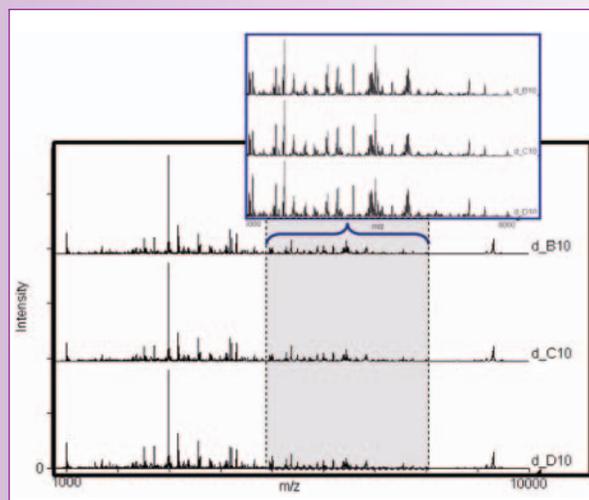


Figure 2. MALDI 0-TOF MS spectra of three healthy human serum replicates processed using ProXPRESSION Biomarker Enrichment Kits (1,000–10,000 Da displayed, insert shows zoom of reproducibility in the 5,000–8,000 Da range).

# BioXPRESSION

## Biomarker Discovery & Validation Platform

### Enhance biomarker feature detection with the prOTOF 2000 MALDI O-TOF Mass Spectrometer

Providing superior biomarker discovery performance characteristics over traditional axial MALDI systems, PerkinElmer's prOTOF 2000 MALDI Orthogonal-TOF mass spectrometer gives excellent mass accuracy and sensitivity plus high resolution over a wider mass range, assuring high information content. This translates into ease-of-use and higher confidence in the resulting data. The broader mass range (100 Da–300,000 Da) in a single acquisition reduces the number of runs and eliminates the need for “spectral stitching” to combine multiple acquisitions (see Fig. 3).

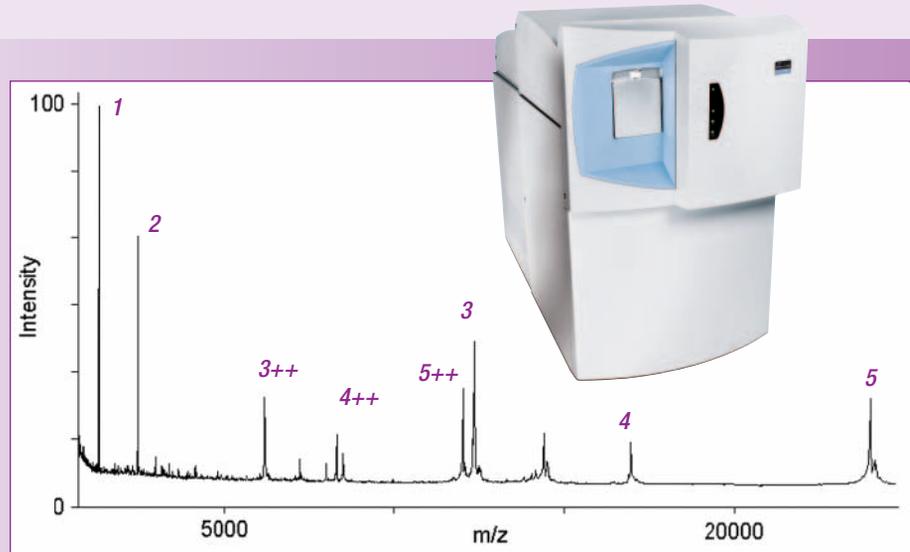
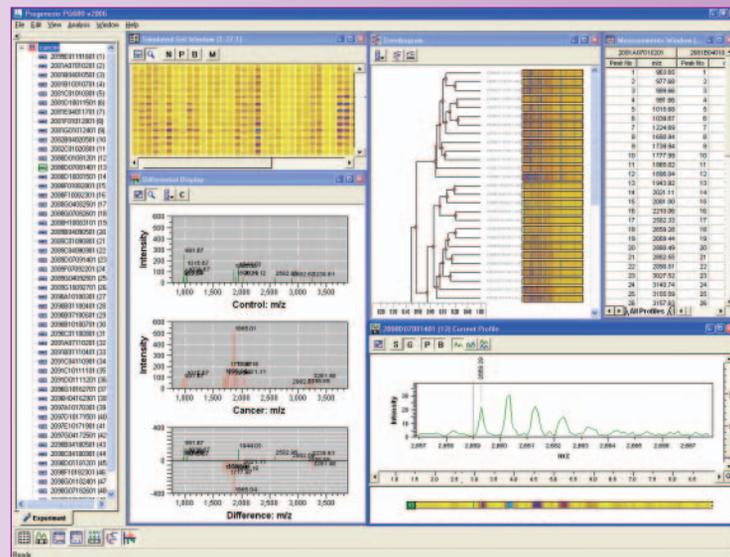


Fig. 3: Wider mass range analysis with the prOTOF MALDI O-TOF MS: Collect from 100 Da–300,000 Da in a single acquisition.

### Perform advanced informatics analysis with PG600 Technology

PG600 is a powerful software platform that provides the capability to rapidly visualize spectra for biomarker discovery analysis. With its intuitive user interface, PG600 allows the user to take full advantage of their data by performing peak detection, spectral visualization, clustering of sample and control data sets and full report generation. This dynamic software package provides easy-to-use, reproducible discovery capabilities in a desktop solution.



The PG600 software has a range of views to assist you with your biomarker analysis.

How can the BioXPRESSION Biomarker Platform help *you* in your own research?

Learn more by visiting PerkinElmer's website at [www.perkinelmer.com/proteomics](http://www.perkinelmer.com/proteomics).

# ProXPRESSION Kits for Biomarker Enrichment

## ProXPRESSION Biomarker Enrichment Kits/ProXPRESSION Biomarker Ion Elution Kits

### ProXPRESSION Kits for Biomarker Enrichment

*PerkinElmer's ProXPRESSION biomarker enrichment technology lets you easily and rapidly purify complex biological and protein samples, preparing them for 1-D or 2-D gel analysis or complex mass spec-based biomarker discovery applications. Reducing the complexity of protein mixtures (such as those from whole cells) can facilitate the detection of low abundance, extremely acidic or basic, or very low molecular weight proteins.*

*Our novel, carrier protein-based biomarker enrichment process uses patented membrane adsorber (MA) chromatography technology combined with PerkinElmer's proprietary buffers and elution chemistries to optimize the capture and recovery of low abundance protein and peptide species.*

*Three different carrier protein-based chemistries are available. Each chemistry enriches for a unique set of low-abundance, rare fragments.*

### ProXPRESSION Biomarker Enrichment Kits

The ProXPRESSION Biomarker Enrichment Kits reduce the complexity of protein mixtures in a serum or plasma sample by fractionating it, so that the recovered fraction is enriched in proteins and peptides and the albumin content is minimized.

The capture and elution of the peptides and proteins from albumin enhances the abundance of low-level peptides and proteins in the sample. As a result, lower levels of these important components can be detected in subsequent MALDI mass spectrometer analysis with excellent sensitivity and reproducibility.

- Provide efficient, reproducible, microscale fractionation protocols for complex protein mixtures.
- Deliver excellent sample-to-sample repeatability for consistent purifications.
- Ensure repeatable mass spec analysis of low molecular weight and low abundance peptides and proteins.
- Choose the Manual Enrichment Kit for moderate throughput studies (10–100 analyses) or the HT Enrichment Kit for higher throughput studies (100–10,000 analyses).

Product	Size	Product No.
ProXPRESSION Biomarker HT Enrichment Kit	1 kit	BMK104096KT
ProXPRESSION Biomarker Manual Enrichment Kit	1 kit	BMK102010KT

### ProXPRESSION Biomarker Ion Elution Kits

The ProXPRESSION Biomarker Ion Elution Kits reduce the complexity of protein mixtures in a serum or plasma sample by fractionating it to minimize albumin IgG and other carrier proteins. The recovered fraction is enriched in peptides.

- Provide repeatable sample-to-sample preparation for mass spec analysis of low molecular weight peptides.
- Enhanced sensitivity and specificity improves detection of lower abundance peptides found in serum or plasma.
- Choose the Manual Ion Elution Kit for moderate throughput studies (10–100 analyses) or the HT Ion Elution Kit for higher throughput studies (100–10,000 analyses).

Product	Size	Product No.
ProXPRESSION Manual Ion Elution Kit	1 kit	BMK103010KT
ProXPRESSION HT Ion Elution Kit	1 kit	BMK105010KT

Customer Support e-mail: [productinfo@perkinelmer.com](mailto:productinfo@perkinelmer.com)

Technical Support e-mail: [techsupport@perkinelmer.com](mailto:techsupport@perkinelmer.com), [techsupport.europe@perkinelmer.com](mailto:techsupport.europe@perkinelmer.com)

Visit our website at [www.perkinelmer.com/reagents](http://www.perkinelmer.com/reagents)

# BioXPRESSION Platform Accessories

## ProXPRESSION Kits

### ProXPRESSION Basic & Acidic Protein Enrichment Kits

Pre-fractionation enhances the resolution of proteins gels with similar characteristics on 1-D or 2-D gels by reducing the number of proteins that co-migrate in the gel.

The ProXPRESSION Basic Protein Enrichment and Acidic Protein Enrichment Kits are designed to fractionate a protein sample so that the recovered fraction is enriched in proteins having either a basic pH (greater than approximately 6.8) or an acidic pH (less than approximately 7.2).

- Provide efficient, reproducible, microscale fractionation protocols for complex protein mixtures.
- Improve detection of lower abundance proteins and your quantitative accuracy to identify differences between diseased and normal samples.



Product	Size	Product No.
ProXPRESSION Acidic Protein Enrichment Kit	1 kit	BMK100010KT
ProXPRESSION Basic Protein Enrichment Kit	1 kit	BMK101010KT

## BioXPRESSION Platform Accessories

### ProXPRESSION MALDI Standards Kit

The ProXPRESSION MALDI Standards Kit is used to validate the performance of the proTOF 2000 or any other MALDI MS system. It provides a convenient and standardized way to do cross platform validation prior to beginning any analytical studies or for multi-site validations.

Designed for ease of use, high analytical reproducibility and consistent signal-to-noise ratio, the ProXPRESSION MALDI Standards Kit provides reproducible, standard analytical conditions. It contains peptide and protein mixtures, individual standards and diluent to test sensitivity and high mass performance. It also includes protein digests for proteomic applications. Its pre-measured reagents eliminate a source of error in daily operations and reduce the amount of time spent preparing calibrants.

Product	Size	Product No.
ProXPRESSION MALDI Standards Kit	1 kit	6771001

*For Laboratory use. Research Chemicals for research purposes only.*

### ProXPRESSION MALDI Calibration Kit

The ProXPRESSION MALDI Calibration Kit is designed to deliver efficient and reproducible calibrations for the proTOF 2000 and all other MALDI MS systems. Designed with the busy proteomics lab in mind, the kit's reagents are pre-measured to eliminate a source of error in daily operation and reduce the amount of time and labor necessary to prepare samples for analysis. The kit is composed of peptide calibration mixtures, recrystallized matrix and ultrapure premixed solvents, all of the highest levels of purity and accuracy available. A re-crystallized  $\alpha$ -CHCA matrix provides higher sensitivity and improved signal-to-noise ratios than other alternatives.

Product	Size	Product No.
ProXPRESSION MALDI Calibration Kit	1 kit	6771000

*For Laboratory use. Research Chemicals for research purposes only.*

Order by Phone: **1-800-762-4000** or **203-925-4600**

For country-specific ordering information, visit [www.perkinelmer.com/lasoffices](http://www.perkinelmer.com/lasoffices) or see page 4

Order Online: [www.perkinelmer.com/online](http://www.perkinelmer.com/online)

# Western Blot Detection & Protein Stains

## MALDIchip Single-Use Targets/ProXPRESSION Dichromatic Western Blot Kits

### MALDIchip Single-Use Targets

Our MALDIchip™ disposable sample preparation plates provide a cost-effective sampling substrate that eliminates many common problems associated with stainless steel plates. They are standardized on SBS dimensions (center to center) in 96-, 384- and 1536-well formats to simplify your sample throughput needs. In addition, their unique design helps to ensure that a sample is tightly contained in a specific well. MALDIchip targets are designed for use with the prOTOF 2000 MALDI O-TOF mass spectrometer.

- Minimize chances of cross-contamination between samples from reused sample plates.
- Can be stored for repeat sample analysis if needed.
- Maintain traceability of samples already processed.
- Eliminate possible surface damage resulting from repetitive cleaning of a typical stainless steel plate over time.



Product	Size	Product No.
MALDIchip single use target, 96-well 1 mm	1 each	N701-0040
MALDIchip single use target, 96-well 2 mm	1 each	N701-4021
MALDIchip single use target, 384-well 1 mm	1 each	N701-0041

## Western Blot Detection & Protein Stains

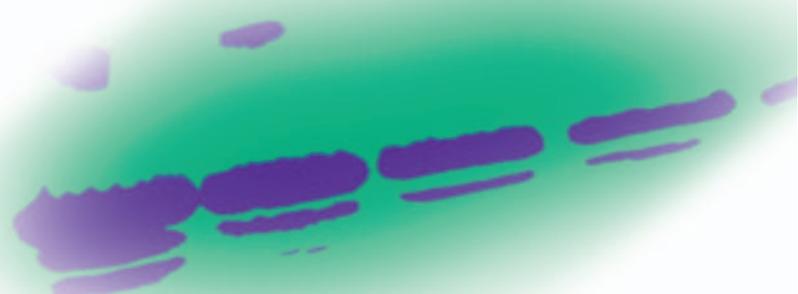
### ProXPRESSION Dichromatic Western Blot Kits

*PerkinElmer has developed a dichromatic detection system that allows simultaneous imaging of total protein profiles and of a specific protein detected by immunoblotting. Our ProXPRESSION Dichromatic Western Blot Kits can detect low nanogram amounts of total protein and provide unambiguous identification of target proteins on a single membrane.*

Our kits use a low fluorescence PVDF membrane for blotting, total protein detection using AquaBlue™ fluorescent protein stain and immunodetection using CDP-Star® with our Nitro-Block II enhancer. This unique combination of fluorescence and chemiluminescence allows simultaneous detection of both total protein and target antigen in the same analysis, reducing analysis time and complexity in a Western blot analysis.

- The AquaBlue Protein Stain detects as little as 1.5 ng of protein in a band. Signal is linear up to at least 400 ng per band.
- The CDP-Star® chemiluminescence substrate is highly sensitive (detects less than 0.1 ng of protein per band) and is ideal for long or multiple exposures, without any loss in signal.
- Compatible with all CCD imaging systems such as PerkinElmer's ProXPRESS™ 2D Proteomic Imaging System or other commercially available instruments.
- Available in two configurations.

Product	Size	Product No.
Dichromatic Western Blot Kit, Anti-mouse IgG, AP-labeled	1 kit	DWB100001KT
Dichromatic Western Blot Kit, Anti-rabbit IgG, AP-labeled	1 kit	DWB101001KT



Customer Support e-mail: [productinfo@perkinelmer.com](mailto:productinfo@perkinelmer.com)

Technical Support e-mail: [techsupport@perkinelmer.com](mailto:techsupport@perkinelmer.com), [techsupport.europe@perkinelmer.com](mailto:techsupport.europe@perkinelmer.com)

Visit our website at [www.perkinelmer.com/reagents](http://www.perkinelmer.com/reagents)

# Western Blot Detection & Protein Stains

## Western Lightning Chemiluminescence Reagents/Protein Stains

### Western Lightning Chemiluminescence Reagents

Our Western Lightning Western Blot Chemiluminescence Reagent Plus is an enhanced luminol-based substrate for rapid HRP-catalyzed detection of Western blots.

- Provides high sensitivity and an excellent signal-to-noise ratio using both PVDF and nitrocellulose membranes.
- Stable unopened at room temperature for at least eight weeks.
- Our original Western Lightning Western Blot Chemiluminescence Reagent provides good sensitivity, suitable for many applications. Shelf life is guaranteed for twelve months from ship date.
- Western Lightning CDP-*Star*<sup>®</sup> Western Blot Chemiluminescence Reagent is used for alkaline phosphatase-catalyzed protein detection.
- Provides the fastest kinetics for short film exposures.
- Signal develops in only 30 minutes, with a maximum signal strength in just two hours. Signal remains continuously strong for 24 hours.
- Well suited for re-exposure.

Product	Description	Size	Product No.
Western Lightning Western Blot Chemiluminescence Reagent <i>Plus</i> (Enhanced Luminol)	For 1,000 cm <sup>2</sup> of membrane	2 bottles (65 mL each)	NEL103001EA
	For 2,500 cm <sup>2</sup> of membrane	2 bottles (170 mL each)	NEL104001EA
	For 5,000 cm <sup>2</sup> of membrane	4 bottles (170 mL each)	NEL105001EA
Western Lightning Western Blot Chemiluminescence Reagent (Enhanced Luminol)	For 1,000 cm <sup>2</sup> of membrane	2 bottles (65 mL each)	NEL100001EA
	For 2,500 cm <sup>2</sup> of membrane	2 bottles (170 mL each)	NEL101001EA
	For 5,000 cm <sup>2</sup> of membrane	4 bottles (170 mL each)	NEL102001EA
Western Lightning CDP- <i>Star</i> <sup>®</sup> Western Blot Chemiluminescence Reagent	For 5,000 cm <sup>2</sup> of membrane	1 bottle (125 mL)	NEL602001KT

### Protein Stains

PerkinElmer offers SYPRO<sup>®</sup> Ruby, a popular protein stain for imaging applications.

Product	Size	Product No.
SYPRO <sup>®</sup> Ruby Protein Gel Stain	5 L pack	S-21900
SYPRO <sup>®</sup> Ruby Protein Gel Stain	1 L pack	S-12000

Order by Phone: **1-800-762-4000** or **203-925-4600**

For country-specific ordering information, visit [www.perkinelmer.com/lasoffices](http://www.perkinelmer.com/lasoffices) or see page 4

Order Online: [www.perkinelmer.com/online](http://www.perkinelmer.com/online)

# The Geliance Imaging Family

## Geliance Imaging Family

### The Geliance™ Imaging Family

*Increase your laboratory output — and ultimately, your productivity and efficiency — with our easy-to-use Geliance™ Imaging Family. From basic fluorescence to more challenging chemiluminescence imaging applications, Geliance systems help you meet your ever-tightening deadlines. Plus they're backed by our reliable, fast-response service and support team.*

For basic fluorescence applications, the Geliance 200 system is an affordable, easy-to-use, advanced resolution system for 1-D gel documentation and analysis.

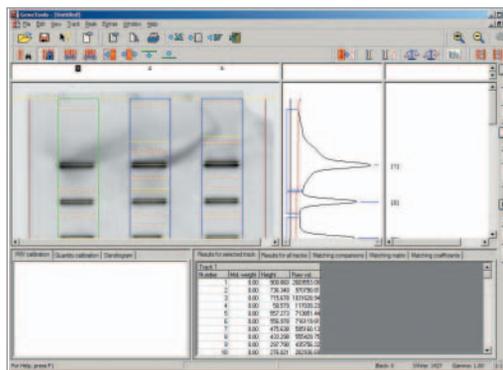
If your applications also require powerful chemiluminescence imaging, the Geliance 600 system's innovative design provides a choice of optics and lighting options. Its high performance cooled CCD camera with high quantum efficiency, good quality large aperture optics and a choice of lighting options can be used for all fluorescence and chemiluminescence samples including our Western Lightning Chemiluminescence Reagent Plus and ProXPRESSION Dichromatic Western Blot Kits.

The Geliance 600 system has many integrated features, including:

- Real-time image capture, enhancement and analysis. Photographic quality images are instantly ready to print to any PC-compatible printer.
- 1.4 million pixel 16-bit cooled CCD camera with one-button Gel Doc Technology.
- Motorized F1.2 zoom lens system with a feedback functionality that stores focus, aperture and zoom information for easy system set up.
- Standard ethidium bromide DNA gel configuration with a UV trans-illuminator, UV/Vis converter and epi-white light. Optional blue light or overhead epi-UV.

For more information about the Geliance Imaging Family from PerkinElmer, call 1-800-762-4000 or visit [www.perkinelmer.com/geliance](http://www.perkinelmer.com/geliance).

*Geliance... The performance you expect. The support you need.*



Customer Support e-mail: [productinfo@perkinelmer.com](mailto:productinfo@perkinelmer.com)

Technical Support e-mail: [techsupport@perkinelmer.com](mailto:techsupport@perkinelmer.com), [techsupport.europe@perkinelmer.com](mailto:techsupport.europe@perkinelmer.com)

Visit our website at [www.perkinelmer.com/reagents](http://www.perkinelmer.com/reagents)