



# PDQuest™ 2-D Analysis Software

The Ultimate in Flexibility for 2-D Gel Analysis



## Bio-Rad Expression Proteomics

Bio-Rad's approach to expression proteomics focuses on three technologies: sample preparation, gel-based separations, and imaging and analysis. Each technology is ideally suited to a 2-D gel electrophoresis approach to analysis of sample proteins.

High-quality sample preparation prior to 2-D electrophoresis is critical for producing meaningful, reproducible results. Bio-Rad offers the most comprehensive suite of products available for general-purpose sample cleanup to enhance resolution, and for sample fractionation to reduce sample complexity.

**PDQuest 2-D analysis software** offers flexible two-dimensional polyacrylamide gel electrophoresis (2-D PAGE) analysis tools for protein discovery. From spot detection to matching, normalization, analysis, and annotation, PDQuest 2-D analysis software provides ease of use, sophisticated detection and matching algorithms, unsurpassed analysis tools, and integration with the EXQuest™ spot cutter. Its logical workflow makes PDQuest 2-D analysis software a favorite for new users and seasoned professionals in the field of proteomics.

# Flexibility Just

## PDQuest Software for 2-D Gel Analysis

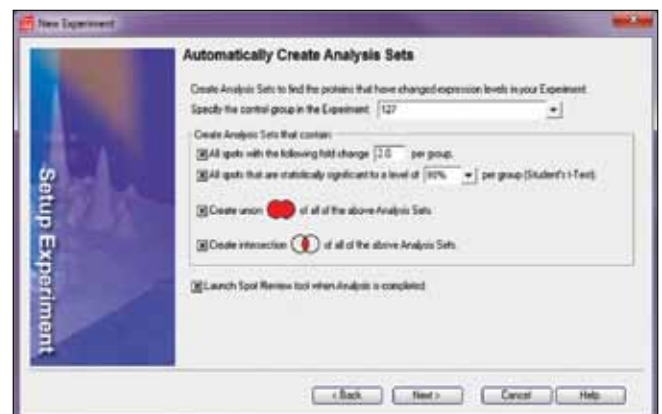
The new wizard-directed user interface makes flexibility and accuracy easy:

1. Pick gels to compare, and group based on experimental variables.
2. Load preset methods, or define new detection, matching, and normalization methods.
3. Use preset expression queries, or create new ones.

All your results are presented in an easy-to-understand format after processing. Use the existing tools in PDQuest to query your data further and fine-tune your experiment — all with the easy-to-navigate menus and wizards. After analysis, use the EXQuest spot cutter wizard to automatically cut proteins of interest for identification by mass spectrometry.



Experiment setup wizard.



Analysis wizard.

## Expression Proteomics Workflow



# Got Easier

## Automated Spot Detection and Matching

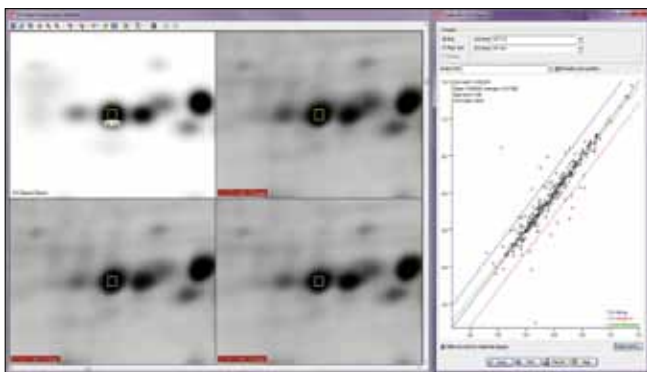
- Gaussian modeling minimizes the need for manual editing by allowing the separation of merged and overlapping spots
- Sophisticated algorithms automate detection and spot matching
- Spot detection summary, matching summary, and replicate group consensus tools optimize spot detection and matching parameters, allowing you to control data analysis parameters without spending hours reviewing processed information
- Proprietary SYPRO Ruby filter provides auto-recognition and removal of background speckles

## PDQuest 2-D Analysis Software Selection Guide

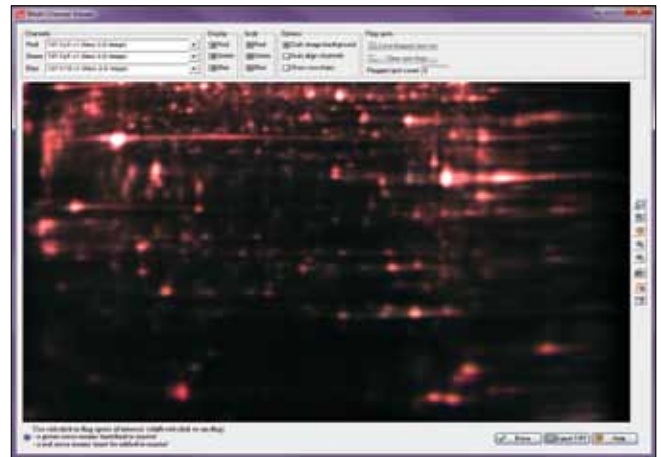
	PDQuest Basic	PDQuest Advanced
Images per experiment	15	Unlimited
Experiment wizard	•	•
Recallable experiment protocol (experiment templates)		•
Batch processing of experiments		•
Image warping (image stacking and multichannel viewing)		•
Matching warped images		•
Multichannel gel analysis		•
Higher-level experiments		•
IDQuest™ software interface		•

## Sophisticated Protein Normalization and Quantitation

- Multiple normalization methods, including difference gel electrophoresis (DIGE), minimize experimental errors across gels due to sample loading and staining variability — multichannel gel analysis features are built into the experiment wizard workflow
- Sophisticated variable background removal ensures accurate quantitation of low-abundance proteins
- Sortable quantity reports include precalculated ratios for all gel spots to reference member spots for easy quantitative comparisons



Scatter plot tool.



Multichannel viewing allows identification of unique proteins, warped or unwarped scanned.

## Statistical Analysis Tools

- Statistical accuracy is reported for Replicate Groups, Sample Classes, and more
- Significance levels are user-adjustable and can be applied to statistical analysis sets
- Boolean queries allow you to combine and compare multiple analysis results
- Wilcoxon paired-sample algorithm provides accurate statistical comparison of sample pairs
- Unlimited number of sample classes can be defined and their attributes assigned or imported from external sources to meet any experimental design

## Data Visualization and Reporting

- Merge and view multiple scans using independent color channels to visualize individual gels, or acquire multiple scans of a single gel using a multiplex approach to identify unique or posttranslationally modified proteins
- “Cyber-gel” composite gel views can be analyzed using overlapping narrow- and micro-range IPG strips to increase resolution beyond limits normally dictated by gel size
- Scatter plot tool is dynamically linked to spots in gel image for convenient identification of up- and downregulated proteins
- 3-D viewer shows a user-defined area of the gel for spot quantity comparison and 3-D orientation of overlapping and well-isolated proteins
- Flexible annotation capabilities allow extensive rich text comments, URLs, or data files to be linked to individual protein spots on gels

## PDQuest 2-D analysis software

Protein identification

• Matching of protein spots across a series of gels

• Normalization of data

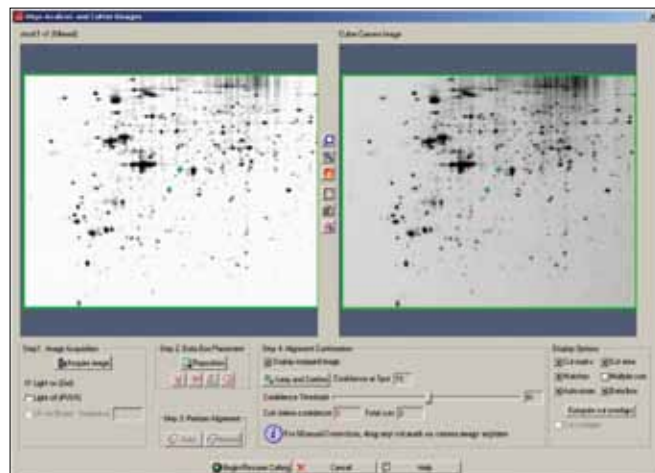
• Data analysis and reporting

• Spot cutting

• Annotation of protein ID

### Unprecedented EXQuest Spot Cutter Integration

Advanced gel imaging and cutting options allow robotic control and integration of spot cutting through the PDQuest spot cutter control panel — either through manual controls or automated using specific analysis sets determined during the discovery phase.



EXQuest spot cutter integration.

### Title 21 Code of Federal Regulations (CFR) Part 11

To provide the security required for compliance with US FDA 21 CFR Part 11 regulations, the PDQuest CFR security module is layered on top of the Microsoft Windows (2000 or XP Professional) operating system security functions.



21 CFR Part 11 log-in screen.

The access control of the application includes the following features, based on the Windows domain or workstation:

- A log-in screen before the application starts
- Global audit entry for security, failed log in, time-out, signatures
- Automatic timing-out of inactive user after a specified time
- Display of logged-in user in application window title
- Different access levels for different user groups

### Ordering Information

Catalog #	Description
<b>PDQuest 2-D Analysis Software</b>	
170-9620	PDQuest Basic 2-D Analysis Software
170-9630	PDQuest Advanced 2-D Analysis Software
170-9631	PDQuest Advanced 1-User Network License
170-9632	PDQuest Advanced 2-User Network License
170-9633	PDQuest Advanced 3-User Network License
170-9634	PDQuest Advanced 4-User Network License
170-9635	PDQuest Advanced 5-User Network License
170-9636	PDQuest Advanced 10-User Network License
170-9640	PDQuest Basic to Advanced Software Upgrade
170-9660	PDQuest Basic Software Upgrade, 7.x to 8.0
170-9670	PDQuest Advanced Software Upgrade, 7.x to 8.0
170-9645	PDQuest Advanced CFR Module

### EXQuest Spot Cutter

165-7200	EXQuest Spot Cutter
165-7201	EXQuest Spot Cutter With PC

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Laboratories, Inc.**

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Group

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**Canada** 905 364 3435 **China** 86 21 6169 8500 **Czech Republic** 420 241 430 532 **Denmark** 44 52 10 00 **Finland** 09 804 22 00  
**France** 01 47 95 69 65 **Germany** 089 31 884 0 **Greece** 30 210 9532 220 **Hong Kong** 852 2789 3300 **Hungary** 36 1 459 6100 **India** 91 124 4029300  
**Israel** 03 963 6050 **Italy** 39 02 216091 **Japan** 03 6361 7000 **Korea** 82 2 3473 4460 **Mexico** 52 555 488 7670 **The Netherlands** 0318 540666  
**New Zealand** 64 9 415 2280 **Norway** 23 38 41 30 **Poland** 48 22 331 99 99 **Portugal** 351 21 472 7700 **Russia** 7 495 721 14 04  
**Singapore** 65 6415 3188 **South Africa** 27 861 246 723 **Spain** 34 91 590 5200 **Sweden** 08 555 12700 **Switzerland** 061 717 95 55  
**Taiwan** 886 2 2578 7189 **Thailand** 800 88 22 88 **United Kingdom** 020 8328 2000

