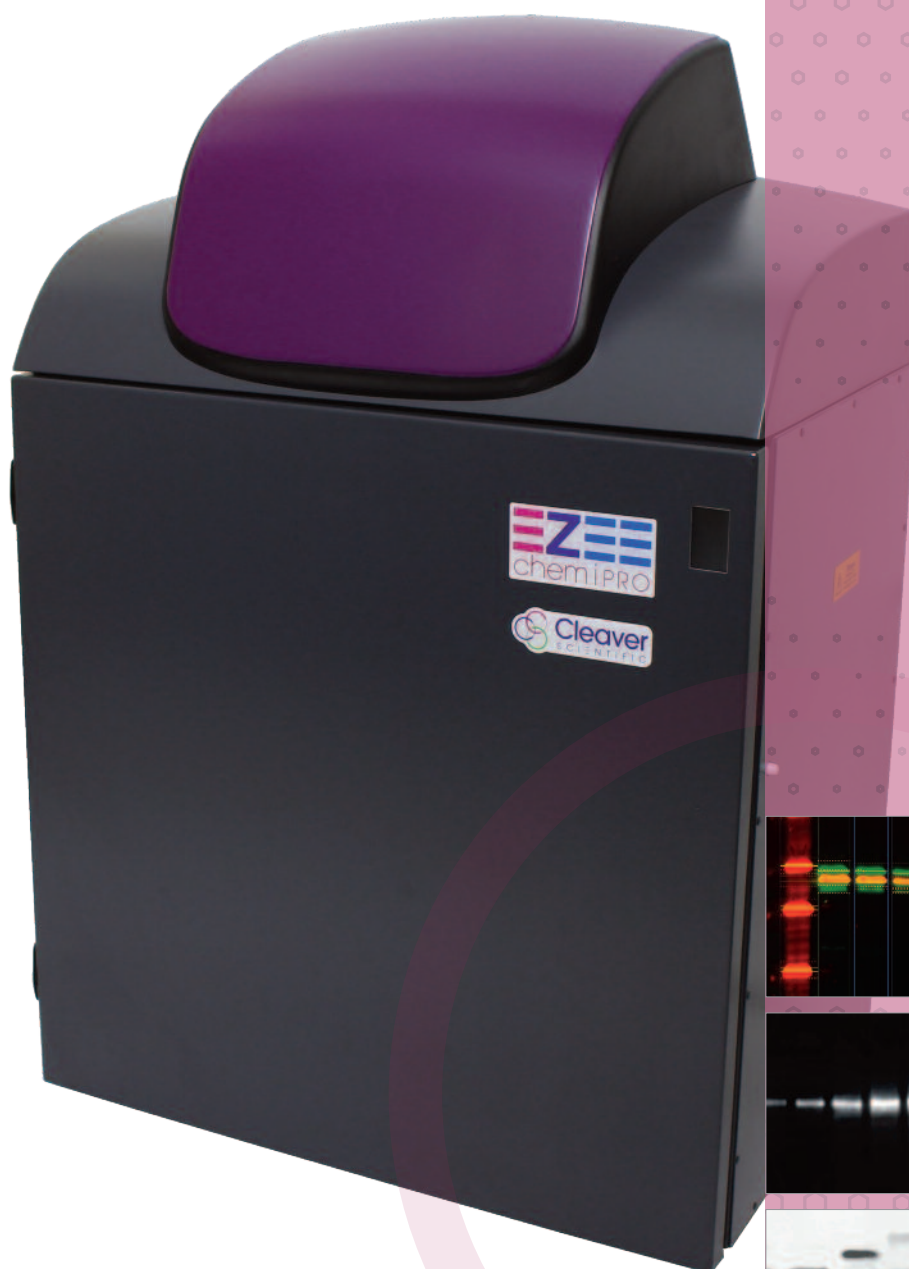
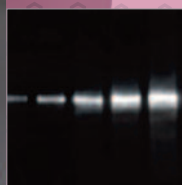
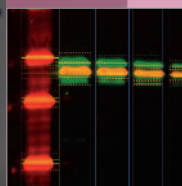


# chemiPRO



capture real  
results **multi  
fluorescence  
and chemi-  
luminescence  
imaging systems**

- CHEMILUMINESCENCE WESTERN BLOTS
- AUTO-RADS DNA OR RNA STAINED WITH ETHIDIUM BROMIDE, SYPRO, SYBR AND "SAFE" DYES ON AGAROSE GELS
- COOMASSIE BLUE OR SILVER STAINED PROTEINS ON ACRYLAMIDE GELS
- STAIN-FREE GELS
- FLUORESCENT GELS OR BLOTS STAINED WITH QDOTS, DYLIGHT, ALEXA FLUOR, CY DYES, AND LI-COR IR DYES
- GFPs
- COLONIES OR PLAQUES ON AGAR PLATES
- BIOLUMINESCENCE
- PLANT IMAGING
- IN VIVO IMAGING
- 2D GELS



# chemiPRO

Great research comes from accurate Western blot and gel data. With so many ways to image chemiluminescence, fluorescent and visible dyes, you need to know which imaging systems truly capture real results.

At Cleaver Scientific, our experts have many years of experience with image analysis systems. Over this time, we have combined our customer's experience and feed-back with our extensive understanding of the science of imaging, to deliver a high performance system, but with simple automation that anyone in the laboratory can use. For blot and gel results you can trust today and tomorrow, you can't beat a chemiPRO system.

## ACCURATE

Combining a cooled, high resolution camera and unique optical imaging allows chemiPRO to generate true-to-life images, and not just digitally enhanced ones. With chemiPRO it is possible to resolve close chemi and fluorescent bands or spots even on complex gels and know they're real.

## SENSITIVE

The chemiPRO systems are multi-application powerhouses for accurately imaging fluorescence, multiplex westerns, agarose DNA gels, visible protein gels, stain-free gels and chemi blots. The system is fully integrated with computer controlled intuitive genePIX software, to allow the impressive 4.80D dynamic range of a chemiPRO to detect femtogram quantities of DNA and proteins time after time.

## FAST

Featuring the option to use not just white LEDs but multi-colour, blue, green, red and infra-red HI-LEDs which are up to 200 times brighter than standard LEDs, the chemiPRO range provides fast exposure and brilliant multiplex fluorescence images.

## FUTURE-PROOF

With the guarantee of free software upgrades not just today but throughout the system's life, chemiPRO will always have the latest imaging capabilities.

### HIGH PERFORMANCE LENS

To generate high quality images, a high performance lens is essential - chemiPRO systems incorporate the best. Using genePIX software, chemiPRO allows easy control over the lens, producing the required results.

### HIGH RESOLUTION CAMERAS

Super-high 4 megapixel resolution cameras which works hard over a range of wavelengths to ensure close fluorescent bands and spots are separated.

### SUPER LOW COOLING

Peltier cooling allows exposure times to be increased to detect faint chemiluminescence without adding annoying background noise.

### FILTER CHOICE

A 7-position motor-driven filter wheel controlled by genePIX software allows the filter to be added for the preferred fluorescent stain. As imaging ethidium bromide and SYBR® stained DNA gels are common, a UV filter has been included as standard.

### TOTAL CONTROL

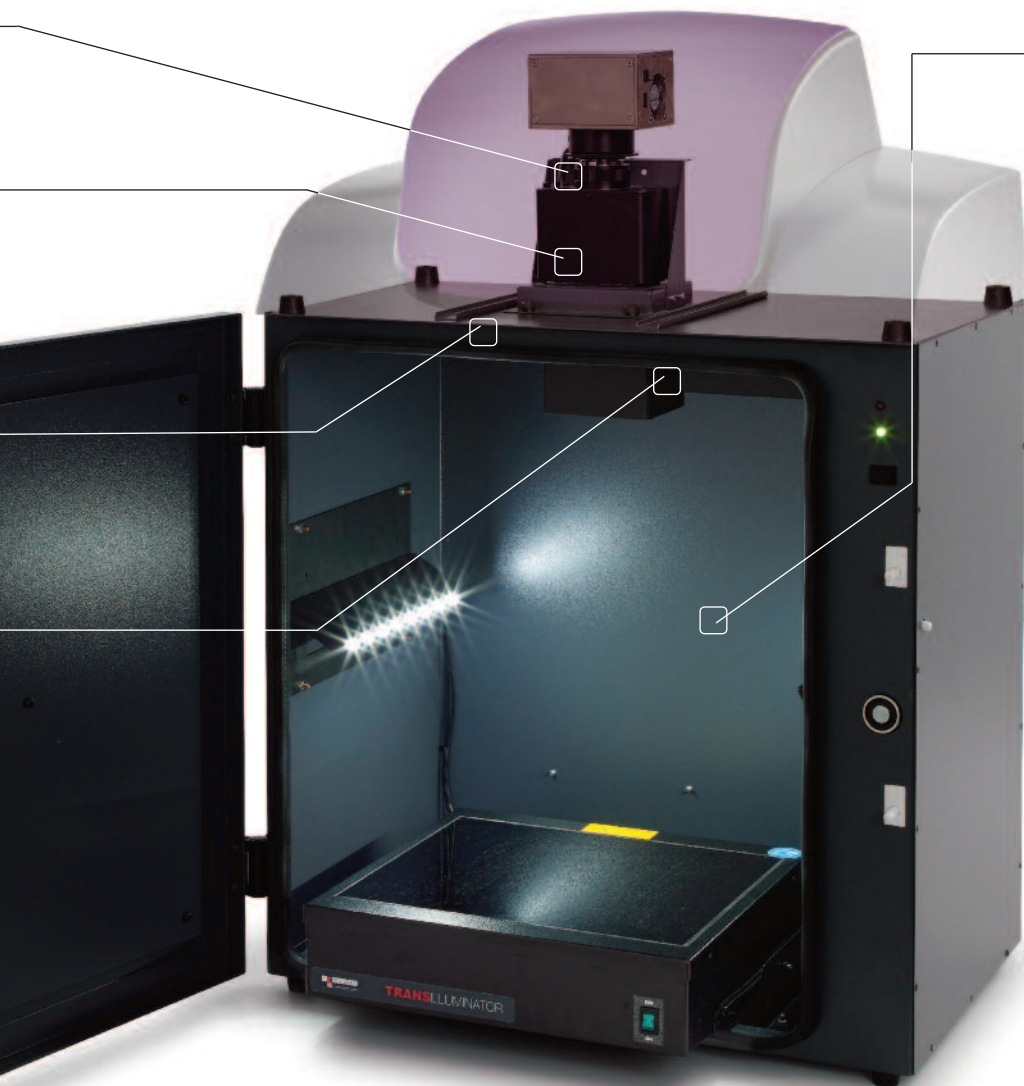
Easily integrating a chemiPRO to a choice of PC and printer offers greater flexibility than using a tablet, allowing the genePIX touch screen controls to be run on a large screen, store a huge number of images and rapidly print publication quality pictures.

### SUPERB SUPPORT

With the exclusive three-year service and support warranty, unlimited copies of genePIX and geneQUANT image analysis software plus free software upgrades, the latest application capabilities will always be available without any hidden extra costs.



# chemiPRO RIGHT LIGHTING, RIGHT APPLICATION



## WHITE LIGHT

To position samples, see visibly stained blots and coloured markers on Westerns, chemiPRO comes with overhead environmentally-friendly, long-life white LED EPI lighting.

## HI-LED EPI LIGHTING OPTIONS

When imaging multiplex fluorescent gels and blots, up to four unique coloured HI-LED (red, blue, green and IR) lights are available. HI-LEDs are up to 200 times brighter than standard LEDs, providing faster exposure times and great images, making chemiPRO an unrivalled, cost-effective alternative to laser-based technology.

## UV TRANSILLUMINATOR OPTION

If only ethidium bromide stained DNA gels and stain-free protein gels are needed then the slide in and out, easy access 302nm UV transilluminator is the ideal option. 254nm and 365nm wavelengths are also available.

## VISIBLE TRANSMITTED LIGHT OPTIONS

For viewing Coomassie Blue, silver stain and other visible stained gels, a conversion screen is available which can be placed over the UV transilluminator to produce a large, evenly illuminated white light.

## BLUE LIGHT CONVERTER SCREEN

If 'safer' fluorescent dyes such as SYBR safe are preferred, the optional blue light conversion screen sits over the UV transilluminator to produce blue light at 460nm.

## BLUE LIGHT TRANSILLUMINATOR OPTION

For visualising many fluorescent dyes including ethidium bromide and the safe dyes without using UV, the 470nm UltraBright Blue LED transilluminator is available as an option.

“SIMPLE IMAGING WITH  
RESULTS YOU CAN TRUST”

# GENEPIX SOFTWARE LOAD AND GO IMAGING

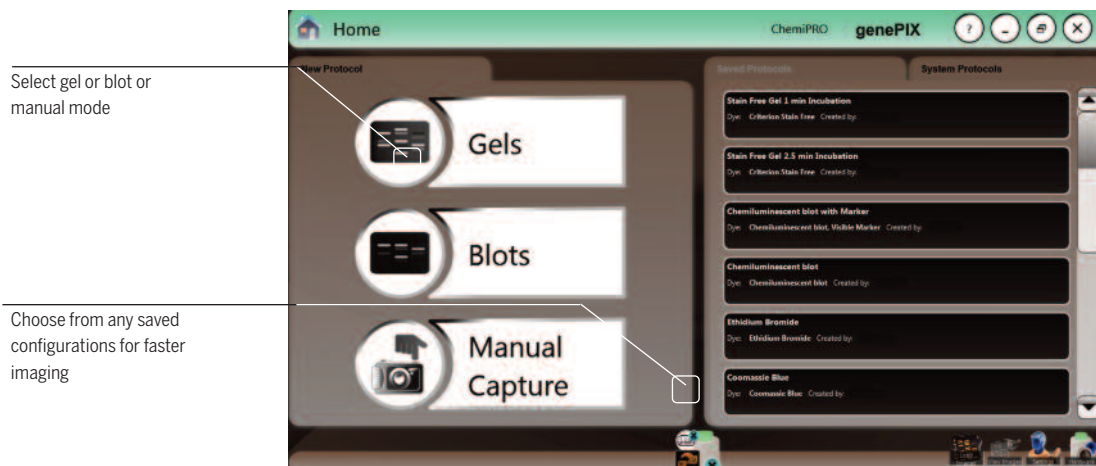
At the heart of chemiPRO is the unique, 'application driven', genePIX software containing an extensive database of dyes, stain-free options and imaging protocols. For rapid and simple imaging with chemiPRO, the only information required is the size and type of gel or blot being used and genePIX automatically selects the correct lighting, filters and focus to create the perfect image.

## CUSTOMISABLE SETTINGS

genePIX in manual mode allows the user to choose their own settings. Alternatively, if several repeat applications are being run and the user wishes to automate the workflow, a protocol can be saved of sample type, dyes, lighting, filters, focus and sample size to set up one button quick image capture or use the system protocols already set up on the system.

## VERSATILE MULTIPLEXING

Using genePIX, up to five different fluorophores can be imaged at a time to visualise them as a multi-colour or as single images, making it easier to find the required information from the gel or blot.



## BRILLIANT WESTERNS

When low light chemiluminescence westerns is being imaged, the genePIX binning feature can be used to reduce exposure times. Binning combines pixels into 2x2, 3x3, 4x4, 5x5 and 6x6 formats to produce a super pixel which collects more light, increasing sensitivity or speeding up image capture time. genePIX also allows one image or a series of timed images of your westerns to be generated. It is even possible to image colorimetric molecular weight markers and automatically overlay them on a chemiluminescent image making sure that the perfect western blot images are created every time.

## PICTURE PERFECT

The chemiPRO systems come with calibrated cameras which automatically eliminate hot pixels or imperfections, generating a clear background free from 'speckles' or 'spots'. The genePIX software includes Dynamic Fielding to automatically correct uneven light, producing a perfect 'flat' background and auto gamma control to automatically set the black and white levels, improving definition between bands or spots and image background. The high-resolution cameras produce publication ready pictures, which can be saved as proprietary SGD, TIFF, JPEG or BMP formats and with audit trail features, to ensure data is fully 21 CFR Part 11 compliant.

## QUICK QUANTIFICATION

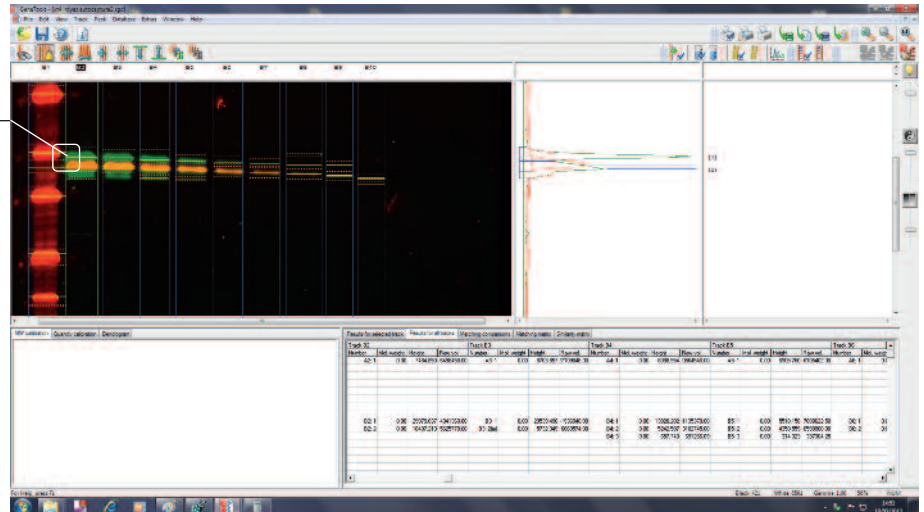
genePIX software includes features for band quantification, saving time, by allowing image quantification of protein and DNA bands while capturing blot or gel images on the chemiPRO system and can be used in a 21 CFR Part 11 compliant environment.



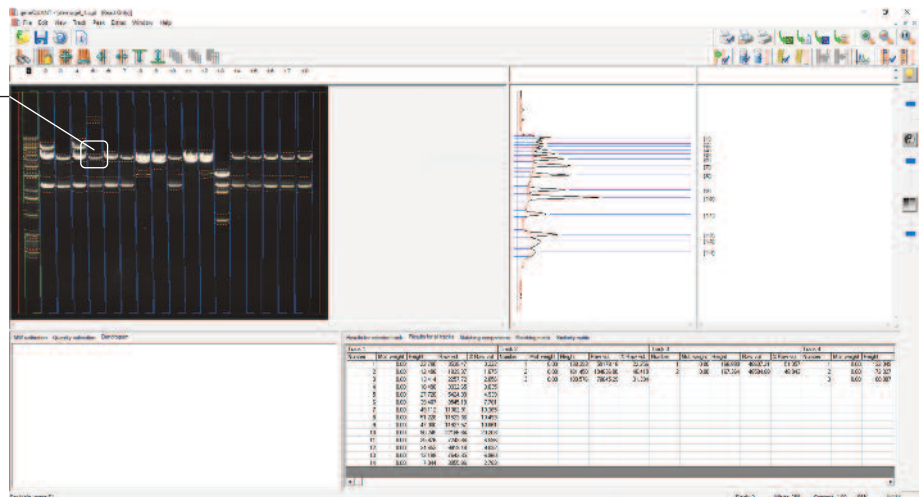
# GENEQUANT FAST IMAGE ANALYSIS

chemiPRO uses geneQUANT image analysis software to allow the rapid detection of lanes and bands as well as view densitometry profiles providing accurate data from real, captured images. With multiplex gels and blots it is even possible to analyse overlaid channels to find bands in separate channels, at the same time as viewing individual ones. User data is easily saved as image files or can be exported directly to Excel and Word, and has audit trails so can be used in a regulated environment.

Accurately quantify a multiplexed Western blot using geneQUANT



Automatically detect lanes and bands and easily add molecular weight ladders with geneQUANT



“ IT HAS NEVER BEEN EASIER TO ANALYSE GELS OR MULTIPLEXED BLOTS ”

## APPLICATIONS INCLUDE:

- 1-D gel analysis
- MW/BP calculation
- Multiplex gels and blots
- E-gels
- Colony counting
- Adding molecular weight ladders
- Band matching with dendrograms
- Spot and slots blots
- Band quantification (automatic and manual)
- GeneDirectory (option) for extended band matching, cluster analysis, VNTR analysis, genotyping, RFLP studies, dendrogram generation and bootstrapping
- Use in a 21 CFR Part 11 compliant environment

### SMART CHEMILUMINESCENCE

When imaging chemiluminescence blots, it is often difficult to get the correct exposure time. Using genePIX, chemiPRO can be set to provide the optimum exposure depending on whether a quick or a high-quality image is required. Since the dynamic range of the chemiPRO is better than X-ray film, more accurate quantifiable data will also be created. Images of visible protein markers can even be captured and, using genePIX, these can be overlaid on a chemiluminescent image to make molecular weight calculations easier.

Figure 2 -  
Chemiluminescence  
Western blot

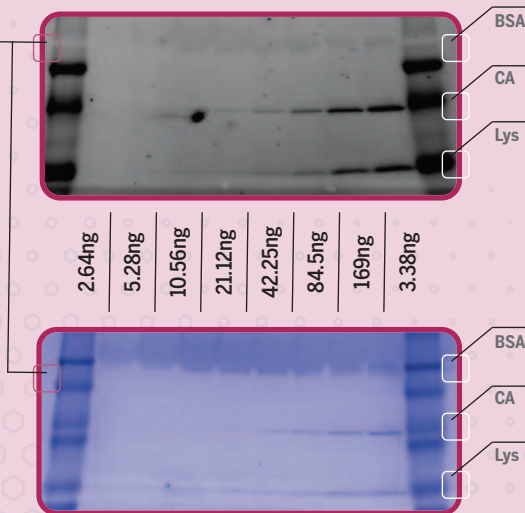


SDS PAGE: SERVAGel TG PRIME 8%  
Blotting: Xpress PVDF Blotting-Kit Transferrin diluted 2-fold  
(5.0ng - 4.8pg)  
1st AB a-human-Transferrin, 2nd AB a-rabbit-IgG-HRP  
SERVALight Polaris CL HRP WB Substrate.  
The image was captured on a chemiPRO

### SIMPLE STAIN-FREE IMAGING

chemiPRO is supplied with pre-set stain-free imaging protocol in the genePIX software so that perfect, accurate images of protein gels can be captured without the hassle of staining and de-staining using dyes such as Coomassie Blue.

Figure 3 - Stain-free gel  
compared to ProtoBlue  
safe stained protein gel



Serial dilutions (338-2.64ng) of a protein mixture (BSA, Carbonic anhydrase and Lysozyme) were run on a Criterion 4-20% TGX Stain-Free gel and imaged with UV on a chemiPRO system and additionally stained with ProtoBlue Safe stain. The linearity and sensitivity of the stain-free method is comparable to the ProtoBlue Safe stain method.

### TECHNICAL SPECIFICATION

SYSTEM	CHEMIPRO
IMAGE RESOLUTION (MEGAPIXELS)	4
EFFECTIVE RESOLUTION (MEGAPIXELS)	16
CAMERA SENSOR	CCD
COOLING - REGULATED	-57C
A/D	16 BIT
GREYSCALE	65,536
DYNAMIC RANGE OD	4.8
QUANTUM EFFICIENCY (@ 425NM)	73%
LENS (MOTOR DRIVEN)	F1.2 ZOOM
STAGE	FIXED
FILTER WHEEL (7-POSITION MOTOR DRIVEN)	ALL FLOURESCENCE APPLICATIONS
UV FILTER	Yes
USE WITH EXTERNAL PC AND PRINTER	Yes
<b>LIGHTING</b>	
EPI LED WHITE LIGHTS	Yes
HI-LED (RED, BLUE, GREEN)	OPTIONAL
HI-LED (RED, INFRARED)	OPTIONAL
HI-LED (RED, BLUE, GREEN, INFRARED)	OPTIONAL
VISIBLE LIGHT CONVERTER	OPTIONAL
BLUE CONVERTER SCREEN	OPTIONAL
SLIDE-OUT UV TRANSILLUMINATOR 302NM, (20CM x 20CM)	OPTIONAL
EDGE LIGHTING UNIT	No
<b>DIMENSIONS</b>	
MAX IMAGE AREA (CM)	30.5 x 22.7
MIN IMAGE AREA (CM)	5 x 3.8
W x H x D (CM)	57 x 84 x 45
WEIGHT (KG)	APPROX. 37
POWER INPUT (V)	100-240

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