

*Ultra Sensitive, Super Speedy and Much more...*

# Lumitein™ Protein Gel Stain

## HIGHLIGHTS

### ■ Highly Sensitive

At least as sensitive as silver stain by detecting as little as 1 ng or less protein.

### ■ Extremely Simple & Fast Staining

Fixation and staining is a single combined step. Use the 30-min Rapid Protocol for excellent result, or the 90-min Basic Protocol for the ultimate sensitivity; no overstaining with longer staining time.

### ■ Excellent Compatibility with Existing Instruments

Can be used with either a simple UV-box (designed for DNA gel viewing), a Dark Reader, or a high-end laser scanner (See Figure 2 for spectra).

### ■ Wide Linear Detection Range

At least three orders of magnitude.

### ■ Perfectly Compatible with Downstream Analysis

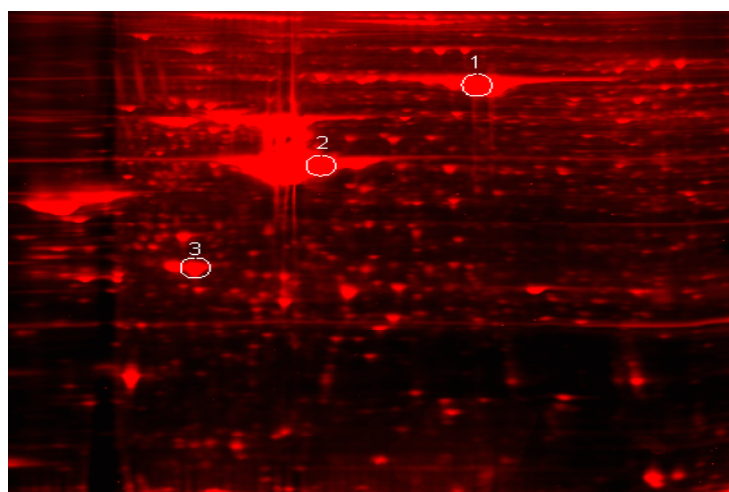
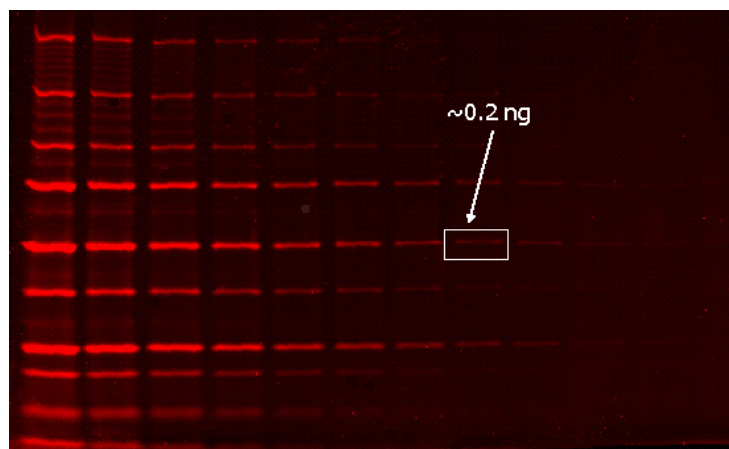
Compatible with MS and sequencing.

### ■ Economical

Supplied as a 100X concentrated solution to reduce manufacturing cost and shipping cost, resulting in significant saving for customers.

### ■ Stable

Both the 100X concentrated solution and the 1X working solution are stable at room temperature for at least 1 year.



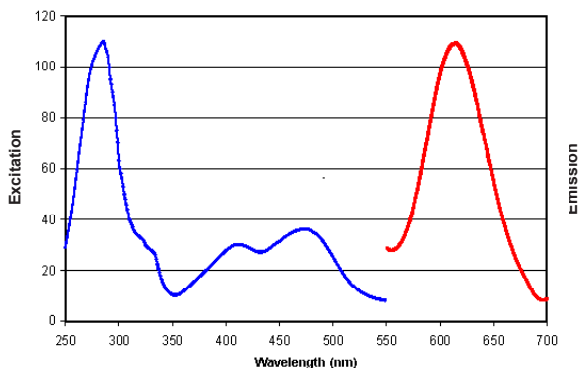
**Figure 1. Top panel:** Two-fold serial dilutions of Precision Plus protein standard (Bio-Rad) were separated via SDS-PAGE and then stained with Lumitein™ for 90 minutes without a separate fixation step. Images were taken with GE Typhoon Trio using 532 nm excitation and 610BP30 emission filter. **Bottom panel:** 2-D gel of human liver protein lysate stained with Lumitein™ and again imaged with GE Typhoon Trio. The three circled spots were picked for MS analysis by Applied Biomics, Inc. (Hayward, CA). The result confirmed that Lumitein™ gel staining is fully compatible with MS analysis (data not shown).



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**L**umitein™ protein gel stain is a luminescent dye designed for detecting proteins in polyacrylamide gels in connection with SDS-PAGE, but can also be used to detect proteins in native PAGE gels after an additional SDS incubation step. Lumitein™ is the only protein gel stain that combines superior sensitivity, staining speed, ease of use and compatibility. It is as sensitive as the best silver stain by detecting 1 ng or less protein (Figure 1). Unlike silver stain, however, Lumitein™ has a linear detection range of at least 3 orders of magnitude (Figure 3). It is among the simplest protein gel stain by staining protein in gels in 90 minutes or less time without a separate fixation step (Table 1). Lumitein™ has an excitation spectrum that makes detection possible with either a simple UV box or a high-end laser scanner (Figure 2). Moreover, protein gel staining with Lumitein™ is compatible with downstream protein analyses such as mass spectrometry and Edman peptide sequencing.

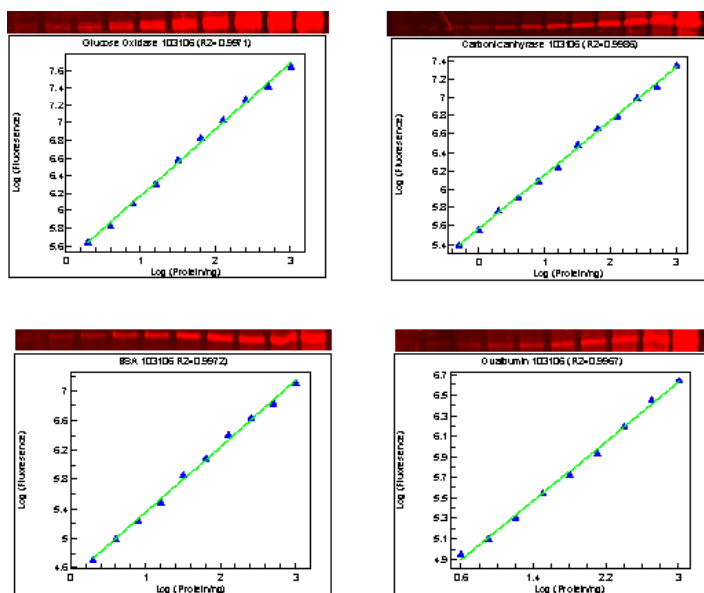
Lumitein™ protein gel stain is available as a highly concentrated, water-based 100X solution, which can be readily diluted to the 1X working solution using a common protein gel fixation solution (methanol/acetic acid/water) that you are already familiar with. One important advantage of Lumitein™ 100X is its highly competitive price as a result of saving associated with reduced manufacturing cost as well as saving on shipping cost. In fact, the cost of using Lumitein™ is now comparable to that using commercial Coomassie Blue-based protein gel staining solutions, while Lumitein™ provides far better sensitivity and user-friendliness. Moreover, because of the small packaging sizes and stability, Lumitein™ 100X provides convenience for storage.



**Figure 2.** Excitation and emission spectra of Lumitein™. The excitation spectrum is compatible with excitation by 300 nm UV light, blue LED, or a laser line at 450, 473, 488 nm or 532 nm. The emission at 610 nm makes ethidium bromide filter suitable for photographing.

Table 1. Comparison of staining protocols

Protocol Step	SYPRO® Ruby	Lumitein™
Fixation step 1	15 minutes, 50% methanol/ 7.5% acetic acid	None
Fixation step 2	15 minutes, 50% methanol/ 7.5% acetic acid	None
Staining	Overnight	30-90 minutes
Destaining	30 minutes, 30% methanol/ 7% acetic acid	Optional: 5 min, 30% methanol/ 15% acetic acid
Rinse step 1	5 minutes, water	Optional: 5 minutes, water
Rinse step 2	5 minutes, water	



**Figure 3.** Linear detection range of Lumitein™ for 4 different proteins. Various amounts of each protein were separated via SDS-PAGE. Gel images were taken by GE Typhoon Trio gel scanner using 532 nm excitation and 610BP30 emission filter. The bands were quantitated using ImageQuant volume analysis. Log luminescence intensity was plotted against log protein amount per band for each protein.

Table 2. Lumitein™ Products

Catalog #	Product Name	Product Size
21002	Lumitein™ Protein Gel Stain, 100X	2 mL
21002-1	Lumitein™ Protein Gel Stain, 100X	10 mL
21002-2	Lumitein™ Protein Gel Stain, 100X	50 mL
21001	Lumitein™ Protein Gel Stain, 1X	200 mL
21001-1	Lumitein™ Protein Gel Stain, 1X	1 L
21001-2	Lumitein™ Protein Gel Stain, 1X	5 x 1L

\* Lumitein and its related technologies are covered by pending US and international patents.  
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