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## Product Information

FluoroStain™ series

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### FluoroStain™ Protein Fluorescent Staining Dye (Red, 1,000X)

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PS1000      1 ml x 1

PS1001      1 ml x 5

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### Storage

Protected from light

-20°C for 24 months

### Working Reagent Preparation

1: 1,000 dilution in standard Alcoholic

Ortho-Phosphoric acid staining solution

## Description

The FluoroStain™ Protein Fluorescent Staining Dye (PS1000/PS1001) is a less toxic and more environment-friendly reagent and designed to substitute the Coomassie Blue protein staining method and Silver Stain, offering great sensitivity and ease of operation. Unlike the Coomassie Blue stain, the FluoroStain™ binds to proteins with high specificity and exhibits low affinity to polyacrylamide gel, making destaining an option rather than a requirement. With further reduction of background signals via destaining process, the FluoroStain™ Protein Fluorescent Staining Dye is capable of achieving detection levels parallel to silver staining (Fig. 1). The FluoroStain™ is also compatible with mass spectrometry analysis, i.e. LC-MS/MS, MALDI-TOF etc., facilitating the use for proteomics analysis.

The FluoroStain™ Protein Fluorescent Staining Dye can be excited by UV and blue light sources, with excitation peaks around 369 and 517nm and emission at 605 nm (Fig. 2). The FluoroStain™ is compatible with both ultra violet illumination systems and less harmful blue light illumination system, such as B-BOX™ Blue light epi-illuminator is recommended.

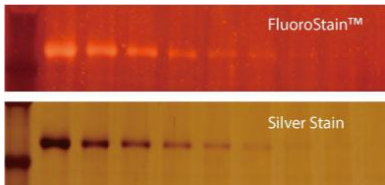


Fig. 1. Remarkable sensitivity of the FluoroStain™ Protein Fluorescent Staining Dye (PS1000/PS1001) in comparison with Silver Stain.

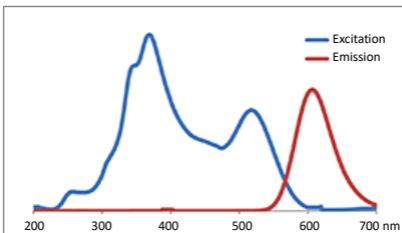


Fig. 2. The Excitation and Emission Spectra of FluoroStain™ Protein Fluorescent Staining Dye (PS1000/PS1001) bound with BSA protein.

## Contents

Fluorescent dye at 1,000X concentration.

## Experimental Protocols

### Standard Protocol

1. Perform protein separation by SDS-PAGE.
2. Dilute the stock FluoroStain™ Protein Fluorescent Staining Dye (Red, 1000X) at a 1:1,000 ratio to a staining solution consisting of 40% EtOH, 2% H<sub>3</sub>PO<sub>4</sub> in deionized water. The volume of staining solution should be at least **15 times of the gel's volume (see Table 1)**.
  - The quantity of staining solution needed is proportional to the gel size, e.g. 100 ml staining solution is an optimal condition for a 1.0 mm thick and 9 x 7 cm SDS-PAGE gel.
  - Use a plastic container. Glass containers are not recommended, as they absorb much of the dye in the staining solution.
  - Fresh preparation of staining solution is recommended.
3. Immerse the gel in the staining solution (1X) and incubate at room temperature for 2 to 24 h.
  - For an optimized sensitivity by minimization of the background signals, a quick rinse with deionized water before staining is suggested. Avoid immersing the gel in the SDS-PAGE running buffer before staining.
  - No fixation procedure is required.
  - Protect the staining container from light by covering it with aluminum foil or placing it in the dark.

#### 4. Visualize or photograph the gel with a UV system or a blue-light illumination.

- It is important to clean the surface of the epi-illuminator or the trans-illuminator with deionized water or 70% ethanol to avoid accumulation of dye, gel debris, and proteins on the surface.
- The video cameras and CCD cameras have a different spectral response as compared with black-and-white print film and thus may not exhibit the same sensitivity.
- If higher sensitivity and lower background is desired, destain the gel with destaining solution consisting of 7% EtOH, 2% H<sub>3</sub>PO<sub>4</sub> in water.

Table 1. The suggested volume of staining solution

Gel dimension (1 mm thick)	Gel volume	1× staining solution
9 cm × 7 cm	≈ 6.5 ml	≈ 100 ml
13 cm × 9 cm	≈ 12 ml	≈ 180 ml
16 cm × 16 cm	≈ 26 ml	≈ 390 ml
26 cm × 23 cm	≈ 60 ml	≈ 900 ml

## Quick Protocol

1. Perform protein separation by SDS-PAGE.
2. Dilute the stock FluoroStain™ Protein Fluorescent Staining Dye (Red, 1000X) at a 1:1,000 ratio to a staining solution consisting of 40% EtOH, 2% H<sub>3</sub>PO<sub>4</sub> in deionized water. The volume of staining solution should be at least **15 times of the gel's volume (see Table 1)**.
3. Immerse the gel in a 1X staining solution of sufficient volume (Table 1), and heat by microwave oven until boiling\*, followed by incubation at room temperature with a gentle shake for at least 30 min.
4. Visualize or photograph the gel with UV or blue-light illumination.
5. Destain with destaining solution consisting of 7% EtOH, 2% H<sub>3</sub>PO<sub>4</sub> in deionized water for 30 min if necessary.

*\*Caution: Handle the heated buffer with care. Avoid inhaling and contact with hot vapour. Proper protective wares are recommended.*

## **Notice & Caution**

Before opening, warm the vial to an ambient temperature to ensure that the fluorescent dye is thoroughly thawed and the solution is homogeneous.

The stock solution should be handled with particular care because the solvent is known to facilitate the entry of organic molecules into tissues.

Please dispose of the stain in accordance with local rules and regulations.

## **Other information**

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Caution: Not intended for human or animal diagnostic or therapeutic uses.

## Related Products

- PM1700 ExcelBand All Blue Broad Range Protein Marker, 250  $\mu$ l  $\times$  2
- PM2510 ExcelBand Enhanced 3-color Regular Range Protein Marker, 250  $\mu$ l  $\times$  2
- PM2700 ExcelBand 3-color Broad Range Protein Marker, 250  $\mu$ l  $\times$  2
- PM2800 ExcelBand 3-color Extra Range Protein Marker, 250  $\mu$ l  $\times$  2
- PM5200 ExcelBand 3-color Pre-stained Protein Ladder, Broad Range, 250  $\mu$ l  $\times$  2
- VE0100 B-BOX™ Blue Light LED epi-illuminator



The latest version of the manual can be downloaded from [www.smobio.com/shop](http://www.smobio.com/shop).

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