

# electrophoresis reagents

## FLUORESCENT GEL STAINS

- **SYPRO ORANGE, FAST, SIMPLE, HIGH SENSITIVITY PROTEIN STAIN THAT RIVALS COOMASSIE® BLUE**
- **RADIANT RED, SINGLE STEP, 30 MINUTE RNA STAIN FOR DENATURING GELS**
- **ETHIDIUM BROMIDE SOLUTION AND TABLETS, CONVENIENT AND SAFE WAY TO USE ETHIDIUM BROMIDE**

## Colorful Options in Fluorescent Gel Staining with SYPRO® Orange, Radiant® Red, and Ethidium Bromide Gel Stains

Fluorescent probes enable researchers to detect particular components of complex biomolecular assemblies with unsurpassed sensitivity and selectivity. Fluorescent staining, such as the use of ethidium bromide, is a widely-accepted technique for detecting nucleic acids. Recently, newer fluorescent compounds, useful for staining proteins and RNA, have made fluorescent staining a popular method in these applications. Bio-Rad offers three powerful fluorescent stains ideal for staining proteins, DNA, and RNA—SYPRO Orange stain, ethidium bromide, and Radiant Red, respectively.

Fluorescent protein bands can be visualized by illuminating the stained gel with a standard 302 nm UV light box. Photograph the fluorescent gel using Polaroid® black-and-white film or image it using the Gel Doc™ system or the Fluor-S™ multimager system.

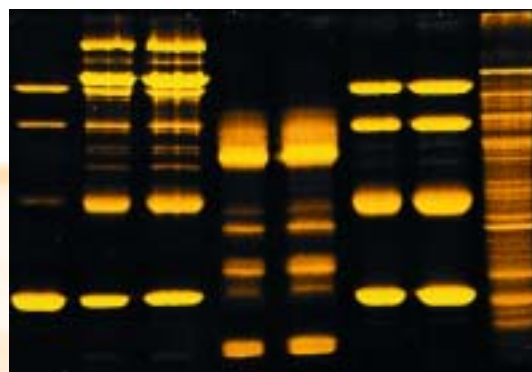
### SYPRO Orange Stain

SYPRO Orange fluorescent stain is the fastest and easiest stain available without sacrificing sensitivity. Staining occurs in 30 minutes, and no destaining is required. With SYPRO Orange, you can avoid the uncertainties of over-staining. This unique dye will not stain DNA or RNA contaminants.<sup>1</sup> SYPRO Orange stain appears to bind to the SDS coat surrounding proteins in SDS polyacrylamide gels. Thus, SYPRO Orange stain exhibits very little protein-to-protein variation and is linearly related to protein concentration across 3 orders of magnitude.<sup>2</sup>

Due to variations in hydrophobicity of the target polypeptides, staining proteins in native gels results in more protein-to-protein variation and a lower sensitivity than staining SDS-denatured proteins. However, sensitivity of SYPRO Orange staining in native gels can be improved if gels are soaked in SDS solution after electrophoresis.

Unlike Coomassie or Silver Stained proteins, SYPRO Orange stained proteins can be eluted by electrophoretic blotting. Blotting and probing can proceed immediately following visualization without interference from the fluorescent dye.

In addition, proteins stained with SYPRO Orange may be transferred to PVDF and successfully microsequenced without intervening steps.<sup>3</sup>



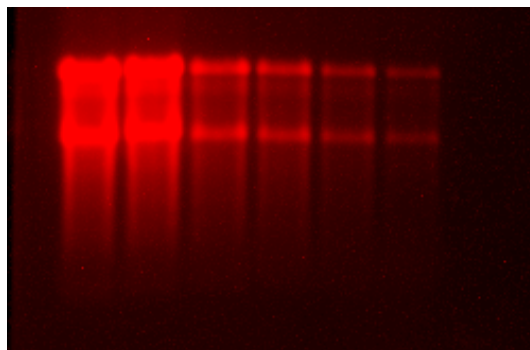
### SYPRO Orange Stain

- Single 30 minute step with sensitivity of 2–10 ng per band
- Reversible stain allows band detection prior to blotting
- No destaining required
- Versatile: compatible with SDS, urea/SDS, 2-dimensional and native polyacrylamide gels, as well as agarose

**BIO-RAD**

### Radiant Red RNA Stain

Radiant Red stain is a high sensitivity fluorescent stain for visualizing RNA following electrophoresis in denaturing agarose gels. Staining RNA in formaldehyde gels with ethidium bromide is a lengthy procedure (up to 2 hours) with low sensitivity. With Radiant Red, staining is accomplished in a single 30 minute step without presoaking or destaining to remove formaldehyde or glyoxal. This high-performance stain allows you to visualize RNA bands which are obscured by high background with ethidium bromide. Radiant Red stain is excited by 302 nm transilluminators and emits a visible red-orange signal. Typical exposure time is 2 seconds at f 5.6 using Polaroid film.

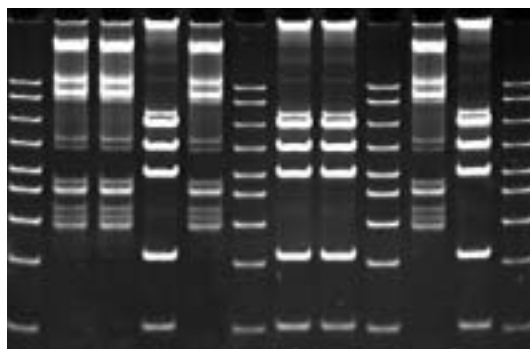


#### Radiant Red RNA Stain

- Single 30 minute step with sensitivity of 10 ng per band
- Compatible with northern blotting
- Stain formaldehyde and glyoxal gels without presoaking

### Ethidium Bromide Stain

Ethidium Bromide Stain Solution and Ethidium Bromide Stain Tablets eliminate preparation and minimize exposure to hazardous ethidium bromide stain. A convenient dropper built into the lid of the stain solution bottle prevents contamination of pipettes. Ethidium bromide tablets offer an alternative to weighing. One tablet, dissolved in 11 ml of water, produces a 1 mg/ml solution.



#### Ethidium Bromide Solution or Tablets

- Stains agarose and polyacrylamide
- Offered in convenient solution or tablet form to minimize exposure

### Reference

- 1 Steinberg, Th., et al., Anal. Biochem., **239**, 238-245 (1996).
- 2 Steinberg, Th., et al., Anal. Biochem., **239**, 223-237 (1996).
- 3 Hamby, R. K., Amer. Biotech. Lab, **14**, 12 (1996).

### Ordering Information

Catalog # Description

#### SYPRO ORANGE STAIN

170-3120 SYPRO Orange Concentrate, 500 µl, sufficient for 50-100 mini gels

#### RADIANT RED STAIN

170-3122 Radiant Red RNA Stain, 10 ml makes 10 L

#### ETHIDIUM BROMIDE STAIN

161-0433 Ethidium Bromide Stain Solution, 10 ml

161-0430 Ethidium Bromide Stain Tablets, 10 x 11 g

Polaroid is a trademark of Polaroid Corporation. SYPRO Orange is a trademark of Molecular Probes, Inc. Coomassie is a trademark of ICI.

**BIO-RAD**

**Bio-Rad  
Laboratories**

Life Science  
Group

**Website** [www.bio-rad.com](http://www.bio-rad.com) **U.S.** (800) 4BIORAD **Australia** 02 9914 2800 **Austria** (01)-877 89 01 **Belgium** 09-385 55 11 **Canada** (905) 712-2771  
**China** 86-10-62051850 **Denmark** 45 39 17 99 47 **Finland** 358 (0)9 804 2200 **France** (01) 43 90 46 90 **Germany** 089 318 84-0  
**Hong Kong** 852-2789-3300 **India** (91-11) 461-0103 **Israel** 03 951 4127 **Italy** 02-21609.1 **Japan** 03-5811-6270 **Korea** 82-2-3473-4460  
**The Netherlands** 31 318-540666 **New Zealand** 64-9-4152280 **Singapore** 65-2729877 **Spain** (91) 661 70 85 **Sweden** 46 (0)8 627 50 00  
**Switzerland** 01-809 55 55 **United Kingdom** 0800-181134