



Radiant[®] Red RNA Stain

Instruction Manual

Catalog Number
170-3122

BIO-RAD

Introduction

Radiant Red stain is a fluorescent dye for staining nucleic acids.¹ It is a superior stain for RNA in denaturing agarose gels containing formaldehyde or glyoxal, where as little as 10 ng of RNA can be detected. Staining these gels with ethidium bromide requires washing and destaining up to several hours to visualize the RNA. This is not required with Radiant Red due to its inherently low background fluorescence in the presence of these denaturants. RNA in formaldehyde and glyoxal gels can be visualized by one staining step in as little as 30 minutes using Radiant Red stain. No destaining is required. The stained nucleic acids are visualized on a standard UV transilluminator. Radiant Red is provided in water at a concentration of 1,000x.

Post-Staining Protocol

The dye should be diluted 1/1,000 (100 µl/100 ml) in the gel running buffer before use. Soak the gel in the dye solution for 30 minutes with shaking (if possible).

The gels do not have to be destained before photographing, although even higher sensitivity can be achieved by destaining. Formaldehyde or glyoxal does not have to be removed before staining. Staining should be done in plastic rather than glass.

Imaging of Gels

Radiant Red stain can be used with standard UV transilluminators. The stain is optimally visualized with 254 or 302 nm light and sensitivity is diminished with 365 nm light. The fluorescence excitation peak of Radiant Red is near 300 nm with a secondary peak near 500 nm. It is therefore compatible for use with transilluminators and argon laser excitation. Higher sensitivity will be obtained using a transilluminator. Black and white photography with Polaroid 667 film can be carried out with the same long pass filter used with ethidium bromide. Typical exposures are 0.5–2.0 seconds at an aperture of f5.6.

Blotting and Hybridization

Gels stained with Radiant Red stain can be blotted after staining using standard procedures. Staining does not interfere with transfer or subsequent hybridization.

Storage and Handling

The concentrated solution should be stored at 4 °C and protected from light. No mutagenicity or toxicity data are available for this compound and it is recommended that it be handled with the same care as ethidium bromide. See enclosed MSDS.

This product is offered for research purposes only.

1. US patent no. 5,730,849 to Bio-Rad Laboratories.