SYBR® Green II RNA gel stain

Cat#： AC17129

Introduction

SYBR® Green II RNA gel stain is one of the most sensitive dyes known for detecting RNA in electrophoretic gels. As little as 100 pg RNA or single-stranded DNA per band can be detected in a SYBR Green II stained agarose or polyacrylamide gel using 254 nm epi-illumination Polaroid® 667, black-and-white print film and a SYBR Green gel stain photographic filter. Even with 300 nm transillumination, as little as 500 pg RNA per band can be detected. SYBR Green II RNA gel stain is significantly more sensitive than ethidium bromide, the most commonly used stain for detecting nucleic acids in gels (Figure 1). With 300 nm transillumination and photography through an orange-red gelatin filter, ethidium bromide's sensitivity limit in a standard agarose minigel is about 1.5 ng single-stranded nucleic acid per band. Note that our detection limits are based on results obtained with a FotoDyne® Foto/UV® 450 ultraviolet transilluminator in combination with Polaroid 667 film. Video cameras and CCD cameras in general have a different spectral response than black-and-white print film and thus may not exhibit the same sensitivity.

A **B**

Figure 1. Dilution series of Escherichia coli ribosomal 16S and 23S RNA electrophoresed in 1% agarose gels. The gels contain an identical twofold dilution series of RNA. The gel shown in panel A was stained for 20 minutes with SYBR Green II RNA gel stain (using a 1:10,000 dilution of the stock reagent) and not destained. The gel shown in panel B was stained for 20 minutes with 5 µg/mL ethidium bromide, then destained for an additional 20 minutes. The SYBR Green II dye-stained gel was excited using 254 nm epi-illumination and the ethidium bromide–stained gel using 300 nm transillumination (Fotodyne® Foto UV 450 ultraviolet transilluminator). Although the SYBR Green II dye-stained gel can be excited at 300 nm, epi-illumination at 254 nm resulted in the best sensitivity in our hands. Both gels were photographed with Polaroid 667 black-and-white print film, using a SYBR Green gel stain photographic filter (SYBR Green II dye-stained gel) or an ethidium bromide gel stain photographic filter (ethidium bromide– stained gel).

SYBR Green II RNA gel stain can be used to:

- Analyze small aliquots from RNA preparations before Northern blotting, start-site mapping or cDNA preparation

- Visualize the migration behavior of 5S rRNA species after high-resolution denaturing gradient electrophoresis (DGGE)
- Stain DNA in single-strand conformation polymorphism (SSCP)
- Stain DNA before amplification by PCR

Materials Contents

SYBR Green II stain is provided as a 10,000X concentrate in DMSO in the following sizes:

- 50 µL 500 µL

Storage

Upon receipt, store the dye frozen at -20°C, protected from light in a desiccator. When stored properly, the SYBR Green II stain stock solution in DMSO is stable for six months to one year.

注：SYBR Green II主要用于RNA和单链DNA电泳。是EB的替代品，无致癌性，超敏感性。用作常规电泳时，须将商品化的核酸MARKER作一定倍数的稀释（1/5-1/10），这样才能得到比较理想的结果。