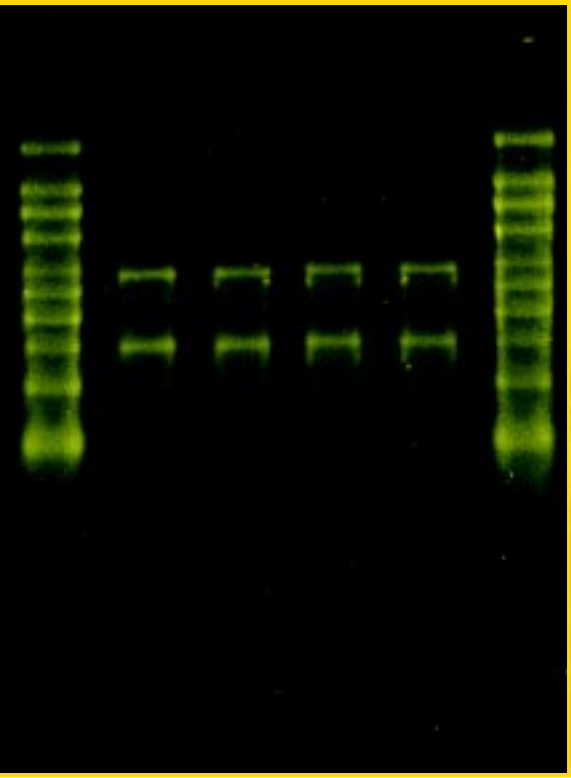
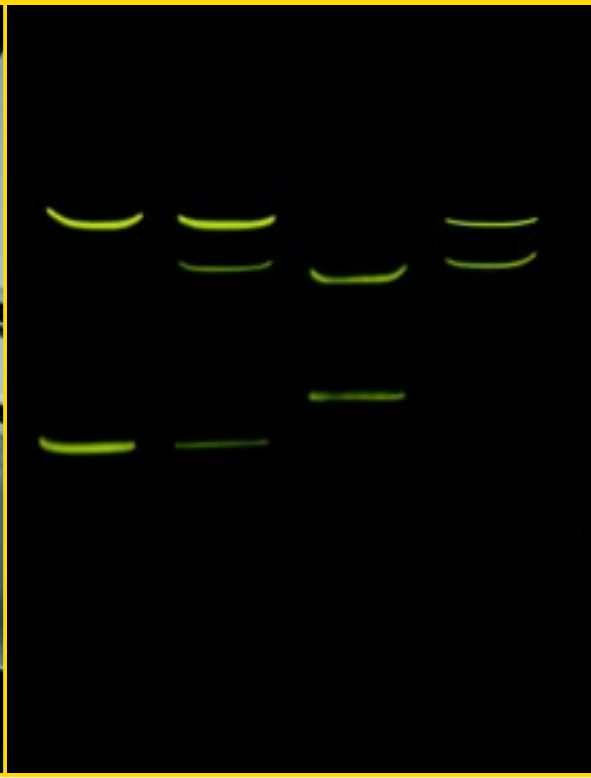
SYBR® Gold

Nucleic Acid Gel Stain

Sensitive fluorescent stain for use with UV transilluminators





SENSITIVE The most sensitive fluorescent stain available for detecting nucleic acids with standard ultraviolet transilluminators

RAPID AND CONVENIENT Stain and photograph even thick and high-percentage gels rapidly — no destaining or washing

VERSATILE Use with formaldehyde/agarose, glyoxal/agarose, urea/polyacrylamide or native agarose or polyacrylamide gels

CONVENIENT Staining does not interfere with DNA modification enzymes or with Northern or Southern blotting

ECONOMICAL The most cost-efficient solution to high-sensitivity detection

Molecular Probes®

Technical Information

SYBR® Gold nucleic acid gel stain is the most sensitive fluorescent dye available for detecting single- or double-stranded DNA or RNA in electrophoretic gels, with standard ultraviolet transilluminators. Following electrophoresis, gels are simply stained in a buffered dye solution. Images are documented using Polaroid® black-and-white photography or CCD-based image documentation systems. Epi-illumination with 254 nm light is not required to achieve high sensitivity.

SYBR Gold stain is a proprietary, unsymmetrical cyanine dye that has high quantum yields (~0.7) when bound to RNA or to single- or double-stranded DNA. SYBR Gold stain is >10-fold more sensitive for detecting DNA and RNA in denaturing urea, glyoxal and formaldehyde gels than ethidium bromide — even using 300 nm transillumination.[1] For detecting glyoxalated RNA, SYBR Gold stain is 25–100 times more sensitive than ethidium bromide (Figure 1) and is by far the most sensitive dye available for this application.[1] SYBR Gold stain rapidly penetrates even thick, high-percentage agarose gels, giving rise to bright gold fluorescent signals.[1] The presence of the dye in stained gels does not interfere with restriction endonuclease activity, and the dye is readily removed from DNA by ethanol precipitation. Even formaldehyde agarose gels do not require destaining because of the low fluorescence of the unbound dye.

References

1. Anal Biochem 268, 278 (1999); **2.** Proc Natl Acad Sci USA 74, 4835 (1997);
3. Sambrook, J., Fritsch, E.F. and Maniatis, T., *Molecular Cloning, A Laboratory Manual, Second Edition*, Cold Spring Harbor Laboratory Press (1989) pp. 7.40–7.42.
4. Mol Pathol 51, 342 (1998).

Materials Supplied

SYBR Gold stain is supplied as a 10,000X concentrate in anhydrous DMSO. Sufficient reagent is supplied to stain at least 100 minigels.

Ordering Information

S-11494 SYBR® Gold nucleic acid gel stain *10,000X concentrate in DMSO* 500 µL
S-7569 SYBR® Green/Gold gel stain photographic filter

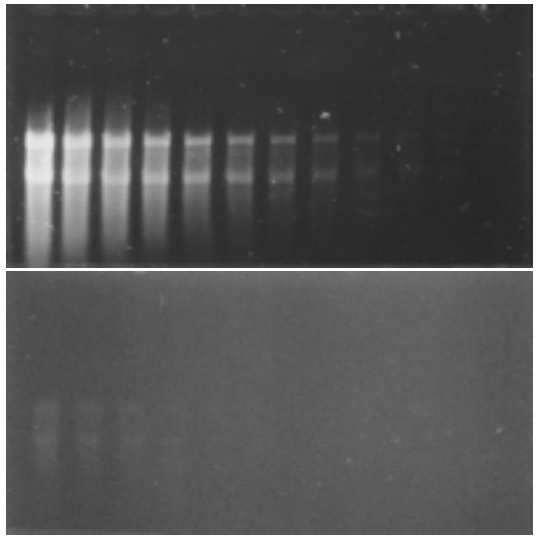


Figure 1. Identical twofold dilutions of glyoxalated E. coli 16S and 23S ribosomal RNA were separated on 1% agarose gels using standard methods[2,3] and stained for 30 minutes with SYBR Gold stain (top) or ethidium bromide (bottom). Both gels were subjected to 300 nm transillumination and photographed with Polaroid 667 black-and-white print film, through a SYBR Green/Gold gel stain photographic filter for the gel stained with SYBR Gold dye and through an ethidium bromide gel stain photographic filter for the gel stained with ethidium bromide.

SYBR Gold stain lets you:

Perform nonisotopic SSCP and DGGE analysis
The high sensitivity of SYBR Gold stain for detecting single-stranded DNA and RNA in polyacrylamide gels makes it an ideal tool for single-strand conformation polymorphism studies and for denaturing gradient gel electrophoresis.

Rapidly stain gels prior to Northern blotting
The lack of background fluorescence in formaldehyde gels stained with SYBR Gold dye means that gels do not have to be destained prior to photography and can be directly transferred to filter membranes. Thus, Northern analysis is more rapid, and samples are less likely to undergo nuclease digestion.

Achieve high-sensitivity staining of glyoxal gels
SYBR Gold stain is by far the most sensitive fluorescent stain available for detecting glyoxalated RNA or DNA in gels.

Save time and money on high sensitivity detection
SYBR Gold stain was found to be more sensitive and much easier to use than silver staining in the telomeric repeat amplification protocols (TRAP) assay.[4]

Use your existing transilluminator
Gels stained with SYBR Gold stain are efficiently excited with 300 nm light and can be easily photographed using a standard transilluminator with an appropriate photographic filter.

For information on any of Molecular Probes' products, please contact our Technical Assistance Department.

For further information contact

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