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Product Information

SYBR Green I DNA Gel Stain, 10,000X in DMSO

Catalog Number	Packaging Size
N104	500 µL

Storage upon receipt:
- 2-25°C
- Protect from light

Ex/Em: 497/520 nm, bound to DNA

Product Description

SYBR Green I is a highly sensitive green fluorescent stain for detecting nucleic acids in agarose and polyacrylamide gels. This stain can detect as little as 50 pg of dsDNA. **SYBR Green I** is compatible with a standard 300 nm transilluminator, a 254 nm transilluminator, a blue-light transilluminator, or a gel reader equipped with visible light excitation such as a 488 nm laser-based gel scanner.
SYBR Green I Nucleic Acid Gel Stain, 10,000X is a concentrated **SYBR Green I** solution that can be diluted 10,000 times for use in precast gel staining or 5,000 times for use in post gel staining according to the procedures described below. One vial of 10,000X solution can be used to prepare at least 100 precast minigels or post-stain at least 100 minigels.

Gel staining with **SYBR Green I** is compatible with downstream applications such as gel extraction and cloning. **SYBR Green I** is efficiently removed from DNA by phenol/chloroform extraction and ethanol precipitation.

Spectral Characteristics

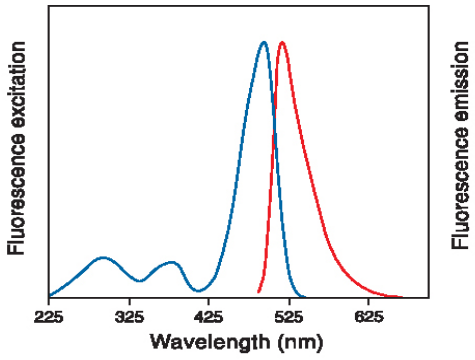

Figure 1. Excitation (blue) and emission spectra (red) of **SYBR Green I** bound to dsDNA in TBE buffer.

Staining Protocols

1. Post-staining Protocol

1.1 Run gels as usual according to your standard protocol.
1.2 Dilute the **SYBR Green I** 10,000X stock reagent 5,000 fold to make a 2X staining solution in TE, TBE, or TAE buffer.
1.3 Carefully place the gel in a suitable polypropylene container. Gently add enough of the 2X staining solution to submerge the gel.
1.4 Agitate the gel gently at room temperature for 30 min.
1.5 Wash the gel with DI water to remove excess dye. Image the stained gel with a transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR Filter or GelStar filter.

2. Pre-cast Protocol

Note: SYBR Green I is highly sensitive DNA stain. If the loading amount of DNA is over 100 ng, it will affect significantly band shift. In that case, reduce DNA loading amount or switch to post gel stain is highly recommended.
2.1 Prepare molten agarose gel solution using your standard protocol.
2.2 Dilute the **SYBR Green I** 10,000X stock reagent into the molten agarose gel solution at 1:10,000 and mix thoroughly.
2.3 Cast the gel and allow it to solidify.
2.4 Load samples and run the gels using your standard protocol.
2.5 Image the stained gel with a transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR Filter or GelStar filter.

Note: The pre-cast protocol is not recommended for polyacrylamide gels. Use the post staining protocol for acrylamide gels.

Related Products

Cat. No	Product Name	Unit Size
N100	GreenView™ DNA Gel Stain, 10,000X in H_2O	500 µL
N101	GreenView™ Plus DNA Gel Stain, 10,000X in DMSO	500 µL
N102	RedView™ DNA Gel Stain, 10,000X in DMSO	500 µL
N103	GreenView™ Ultra DNA Gel Stain, 10,000X in DMSO	500 µL
N104	SYBR Green I DNA Gel Stain, 10,000X in DMSO	500 µL
N105	SYBR Green II RNA Gel Stain, 10,000X in DMSO	500 µL
N106	SYBR Gold DNA Gel Stain, 10,000X in DMSO	500 µL

Troubleshooting

Problem	Suggestion
Smeared DNA bands in precast gel	1. Reduce the amount of DNA loading. Smeared bands can be caused by overloading. 2. Perform post-staining instead of pre-casting. 3. Prepare a lower percentage agarose gel for better resolution of large fragments. 4. Change the running buffer. TBE buffer has a higher buffering capacity than TAE.
Discrepant DNA migration in precast gel	1. Reduce the amount of DNA loading. 2. Reduce the amount of dye used, i.e. use 0.5X in precast gels. 3. Perform post-staining instead of pre-casting.
Weak fluorescence signal	1. The dye may be precipitated out of solution. Vortex to redissolve. 2. Increase the amount of dye used, i.e. use 2X in precast gels.

Frequently Asked Questions

Question	Answer
Can SYBR Green I be used to stain ssDNA or RNA?	Yes.
Is SYBR Green I compatible with downstream applications such as cloning, ligation and sequencing?	Yes. We recommend Qiagen or Zymo gel extraction kits or phenol-chloroform extraction to remove the dye from DNA.
Is SYBR Green I compatible with Southern or Northern blotting?	SYBR Green I has not been validated in blotting applications.
Can I reuse a SYBR Green I precast gel after electrophoresis?	We do not recommend reusing SYBR Green I precast gels as signal decreases with subsequent electrophoresis.
What is the lower detection limit of SYBR Green I?	Some users have reported being able to detect less than 50 pg DNA. However, the limit of detection will depend on instrument capability and exposure settings.
Does SYBR Green I need to be used in the dark?	You can use the dye in room light, however we recommend storing the dye in the dark.