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SolarGelGreen Nucleic Acid Gel Stain (10000×)

Catalog Number: G5570

Size: 0.5 mL

Storage:

SolarGelGreen is stable for at least one year when protected from light, at room temperature. Dye precipitation may occur at lower temperatures, resulting in lower signal or the appearance of precipitate on the surface of the gel. If this occurs, heat the solution to 45-50℃ for two minutes and vortex.

Product Description:

SolarGelGreen is a sensitive, stable and environmentally safe green fluorescent nucleic acid dye specifically designed for gel staining. SolarGelGreen has UV absorption between 250 nm and 300 nm and a strong absorption peak centered around 500 nm. Thus, SolarGelGreen is compatible with either a 254 nm UV transilluminator or a gel reader equipped with visible light excitation (such as a 488 nm laser-based gel scanner or a Dark Reader).

SolarGelGreen is far more sensitive than SYBR® Safe. Unlike SYBR® dyes, which are known to be unstable, SolarGelGreen is very stable, both hydrolytically and thermally. Unlike the highly mutagenic EtBr and the reportedly mutation-enhancing SYBR® Green I, SolarGelGreen is noncytotoxic and nonmutagenic at concentrations well above the working concentrations used in gel staining, because of the dye's inability to cross cell membranes.

Gel staining with SolarGelGreen is compatible with downstream applications such as gel extraction and cloning. It is efficiently removed from DNA by phenol/chloroform extraction and ethanol precipitation. But it is not designed for qPCR applications, for which we recommend EvaGreen dye.

Staining Protocols:

Because nucleic acid binding dyes can affect DNA migration during electrophoresis, post-staining of gels is highly recommended. Post-staining with SolarGelGreen results in superior sensitivity and eliminates the possibility of dye interference with DNA migration. Post-staining with SolarGelGreen is simple, requiring no destaining and no special buffer. SolarGelGreen also can be included in agarose gels using the precast method. While the precast protocol is more convenient, some DNA samples may experience migration retardation or compromised resolution in the presence of SolarGelGreen. Thus, the post-staining and precast protocols should be compared to determine which one better meets your needs.

Although SolarGelGreen has undergone extensive safety testing, we recommend following universal safety precautions when working in the laboratory.

1. Post-staining Protocol

1.1 Run gels as usual according to your standard protocol.

1.2 Dilute the SolarGelGreen 10000× stock reagent 3300 fold to make a 3× staining solution in H_2O. Note: including 0.1 M NaCl in the staining solution enhances sensitivity, but may promote dye precipitation if the gel stain is reused.

1.3 Carefully place the gel in a suitable polypropylene container. Gently add a sufficient amount of the 3× staining solution to submerge the gel.

1.4 Agitate the gel gently at room temperature for 30 minutes.

1.5 Image the stained gel with a 254 nm transilluminator, a Dark Reader® or a similar transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter or GelStar® filter.

1.6 Staining solution can be reused at least 2-3 times. Store staining solution at room temperature protected from light.

2. Pre-cast protocol

2.1 Prepare molten agarose gel solution using your standard protocol.

2.2 Dilute the SolarGelGreen 10000× stock reagent into the molten agarose gel solution at 1:10000 and mix thoroughly. SolarGelGreen can be added while the gel solution is still hot.

2.3 Cast the gel and allow it to solidify. Any leftover gel solution may be stored and re-heated later for additional gel casting. SolarGelGreen precast gels may be stored at 4℃ for later use.

2.4 Load samples and run the gels using your standard protocol.

2.5 Image the stained gel with a 254 nm transilluminator, a Dark Reader® or a similar transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter or GelStar® filter.

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