

SafeUV Gel Staining Reagent

PUREGENE

Store at -20°C

Cat No. **Pack Size**
PG-900-004 **10,000X, 400uL**

Description

SafeUV Gel Staining Reagent has been specifically developed for reduced mutagenicity, making it safer than ethidium bromide for staining DNA in agarose or acrylamide gels. SafeUV Gel Staining Reagent comes either as a concentrate or as a ready-to-use solution that can be used like an ethidium bromide solution, and the detection sensitivity with SafeUV Gel Staining Reagent is comparable to that obtained with ethidium bromide. DNA bands stained with SafeUV Gel Staining Reagent can be detected using a standard UV transilluminator, a visible-light transilluminator, or a laser-based scanner. The stain is also suitable for staining RNA in gels. Bound to nucleic acids, SafeUV Gel Staining Reagent has fluorescence excitation maxima at 280 and 502 nm, and an emission maximum at 530 nm.

Storage, handling, and disposal

You may store the SafeUV Gel Staining Reagent at any temperature between 2°C to 25°C. SafeUV Gel Staining Reagent in DMSO freezes at low temperatures; therefore, the product must be completely thawed and mixed before using. Repeated freeze-thawing has minimal impact on product performance. SafeUV Gel Staining Reagent showed no or very low mutagenic activity when tested by an independent, licensed testing laboratory, and this stain is not classified as hazardous waste under U.S. Federal regulations.

Features:

Less hazardous: Ethidium bromide has been commonly used as a DNA stain for many years. However, ethidium bromide is harmful if swallowed, and is very toxic if inhaled. In powder form, it is considered an irritant to the eyes and upper respiratory tract. Ethidium bromide has been shown to be mutagenic in various in vitro assays and is an aquatic toxin. SafeUV Gel Staining reagent was evaluated in a battery of toxicity and mutagenicity tests and found to be a safer alternative to ethidium bromide.

Protocol

1. Staining nucleic acids after electrophoresis

Soak the gel in SafeUV Gel Staining Reagent. If using SafeUV Gel Staining Reagent concentrate, dilute 10,000X in TAE or TBE buffer (as appropriate) prior to use. Place the gel in a plastic container, such as a pipet-tip box lid or a household food-storage container. Do not use a glass container, because the dye in the staining solution may adsorb to the walls of the container, resulting in poor gel staining. Add sufficient SafeUV Gel Staining Reagent to cover the gel. A 50 mL volume is sufficient for staining most standard minigels. To stain larger gels, increase the volume of staining solution in proportion to the increased gel volume, and ensure that the gel is fully immersed during staining. Incubate for 30 minutes. Cover the gel and the staining solution with aluminum foil or place them in the dark to protect from light. Continuously agitate the gel on an orbital shaker at 50 rpm. No destaining is required.

2. Precasting SafeUV Gel Staining Reagent in agarose gels

Prepare the agarose gel directly in SafeUV Gel Staining Reagent. SafeUV Gel Staining Reagent is provided in buffer; simply substitute SafeUV Gel Staining Reagent for the buffer when preparing the molten agarose. If using the 10,000X SafeUV Gel Staining Reagent concentrate, dilute the concentrated stain 1:10,000 in agarose gel buffer (e.g., 1X TBE or 1X TAE) and add the buffer plus stain mixture to the powdered agarose. For example if you run TBE gels and require 30 mL of molten agarose for your tray, add 3 µL of 10,000X SafeUV Gel Staining Reagent concentrate to 30 mL of 1X TBE, mix well, and add to the powdered agarose.

Note: You can heat the agarose/ SafeUV Gel Staining Reagent mixture in the microwave. As with precasting gels with ethidium bromide, the mobility of nucleic acid fragments in the gel may be somewhat slower when run in these gels compared to their mobility in the gel without stain.

Run the gel. Use a running buffer appropriate to the SafeUV Gel Staining Reagent formulation. No post-staining or destaining is needed.

3. Viewing and photographing the gel

You can view stained gels using a standard 300 nm transilluminator, a 254 nm epior transilluminator, or a blue-light transilluminator. DNA stained with SafeUV Gel Staining reagent can also be visualized and analyzed using imaging systems equipped with an excitation source in the UV range or between 470–530 nm.



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