

StaySafe™ Nucleic Acid Gel Stain

Designed to replace the toxic Ethidium Bromide (EtBr)

Cat. No. **RSS01**

StaySafe™ Nucleic Acid Gel Stain(20,000X): 1ml

Characteristics: 5 µl x 200 reactions



Description

StaySafe™ Nucleic Acid Gel Stain is designed to replace the toxic Ethidium Bromide (EtBr), known as a highly mutagenic material but commonly used in gel electrophoresis for visualization of nucleic acids in agarose gels. StaySafe™ Nucleic Acid Gel Stain is non-carcinogenic by the Ames-test. The results are negative in both the mouse marrow chromophilous erythrocyte micronucleus and mouse spermary spermatocyte chromosomal aberration tests. StaySafe™ Nucleic Acid Gel Stain can largely reduce your exposure to highly mutagenic ethidium bromide.

StaySafe™ Nucleic Acid Gel Stain emits green fluorescence when bound to DNA or RNA. It has two secondary fluorescence excitation peaks (≈309 nm, ≈419 nm) and one strong excitation peak centered at 514 nm. The fluorescence excitation peak is centered at 537 nm when bound to DNA.

StaySafe™ Nucleic Acid Gel Stain is quick, safe and sensitive. It's even more sensitive than Ethidium Bromide. DNA concentration as low as 5 ng can still be detected. StaySafe™ Nucleic Acid Gel Stain is an exceptionally sensitive nucleic acid gel stain that makes it ideal for detecting nucleic acid in gels using laser scanners or standard UV transilluminators. It's also compatible with a wide variety of gel reading instruments.

Features

Stay Safe: non-mutagenic, non-toxic, non carcinogenic.

Go Green: no hazardous waste.

Highly Sensitive: DNA concentration as low as 5 ng can still be detected.

Extremely Stable: stable at room temperature and microwavable.

Applications

Ideal for nucleic acids (double-strand DNA and single-stranded RNA) detection within agarose gel after electrophoresis under UV illumination.

Quality Control

StaySafe™ Nucleic Acid Gel Stain is tested on a lot-to-lot basis by extracting nucleic acids from animal tissue and performing electrophoresis with the agarose gel stained with StaySafe™ Nucleic Acid Gel Stain.

Important Notes Before Starting

To avoid losing stain, briefly spin down StaySafe™ Nucleic Acid Gel Stain to deposit the solution at the bottom of the vial. Stain may be divided into smaller aliquots for convenience.

Procedure

- (1) Heat the agarose gel solution in the microwave until the solution is completely clear.
- (2) Please make sure that the agarose gel solution is completely clear before adding in StaySafe™ Nucleic Acid Gel Stain. Do not add in the gel stain right after the agarose is just dissolved. Wait till the agarose gel solution is cooled to around 55-60°C. Then add in StaySafe™ Nucleic Acid Gel Stain. Add StaySafe™ Nucleic Acid Gel Stain (20,000X) to the agarose solution. StaySafe™ Nucleic Acid Gel Stain : Agarose gel solution = 1 : 20,000. For example: add 5 µl of StaySafe™ Nucleic Acid Gel Stain in 100 ml of agarose gel.
- (3) Mix the solution gently without forming bubbles.
- (4) Wait until the solution is cooled down to 40-50°C, pour it into the gel tray and allow the solution to solidify. The optional thickness of the gel should be <0.5cm to avoid low sensitivity.
- (5) Perform electrophoresis and view the results under UV illumination. Green fluorescence bands are visible in the existence of nucleic acids. (DNA is observable under visible light when it is >50ng)

Modified Procedure

for viewing shorter-fragment nucleic acid or for producing thick gel >0.5cm

- (1) Make agarose gel without adding in StaySafe™ Nucleic Acid Gel Stain.
- (2) Add StaySafe™ Nucleic Acid Gel Stain (20,000X) into the running buffer. StaySafe™ Nucleic Acid Gel Stain : running buffer = 1 : 20,000. For example: add 5 µl of StaySafe™ Nucleic Acid Gel Stain in 100 ml of running buffer.
- (3) After electrophoresis, stand still 10 minutes and then view the results under UV illumination. Green fluorescence bands are visible in the existence of nucleic acids. (DNA is observable under visible light when it is >50ng)

Frequently Asked Questions

What instruments can be used to detect StaySafe™ Nucleic Acid Gel Stain?

StaySafe™ Nucleic Acid Gel Stain is compatible with standard UV transilluminator, such as UV-A (especially 270nm) and UV-B (300nm), or a gel reader with visible light (420 ~ 510 nm).

What emission filters are suitable for use with StaySafe™ Nucleic Acid Gel Stain?

All SYBR Green filter (494nm and 521nm), green or yellow filter can be used with StaySafe™ Nucleic Acid Gel Stain. The ethidium bromide filter can not be used with StaySafe™ Nucleic Acid Gel Stain.

Can StaySafe™ Nucleic Acid Gel Stain be used in formaldehyde based RNA gels?

Yes! The result is as good as DNA gels.

Disposal

Waste must be disposed in accordance with environmental control regulations.

Waste can be treated as general chemicals.

Waste can be also treated as biological waste after sterilization.

Storage Conditions

StaySafe™ Nucleic Acid Gel Stain shall be shipped at room temperature or 4 °C.

StaySafe™ Nucleic Acid Gel Stain shall be stored at 4 °C and kept away from light.

Do not freeze it! With proper storage, StaySafe™ Nucleic Acid Gel Stain can be stored for up to 24 months without showing any deduction in performance and quality.