DNAbiotech

Biotechnology is our expertise

Safe nucleic acid stain for gel
(Safe Stain for gel)

Catalog no.: DB9738

1× 500 µl and 5 × 500 µl

Intended for Research Use Only

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Diba NoAvaran Azma Company

Customer and technical support

If you have any question, do not hesitate to ask! DNAbiotech would be highly appreciated for any comment(s).

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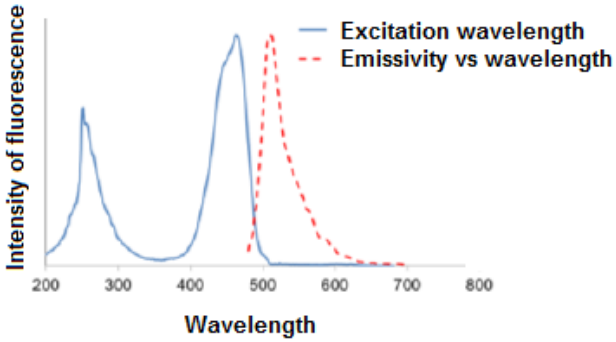
General description

DNAbiotech **"Safe nucleic acid stain for gel" (Safe Stain for gel)** is specially designed for in-gel use and is a safer replacement for conventional Ethidium bromide (EtBr), which poses a significant health and safety hazard to its users. It is a fluorescent stain which offers highly sensitive detection of double-stranded or single-stranded DNA and RNA in a convenient manner. **Safe Stain** offers high sensitivity that is as great as EtBr. This Stain is compatible with both conventional UV gel-illumination systems as well as harmless long wavelength blue light illumination systems. When bound to nucleic acids, this Stain has a fluorescent excitation maximum of 250 and 482 nm, and an emission maximum of 508 nm. Therefore, it can replace EtBr without the need of changing existing lab imaging systems.



The emission and exitation spectrum of DNAbiotech Safe Stain for gel

Product Information

Cat #: DB9738-500
Volume1× 500 µl and 5 × 500 µl
Concentration: 10.000X
Storage condition: **Keep out of light**
at 4°C for 12 months
at -20°C for 24 months

Caution

Dispose of the stain in accordance to local rules and regulations for chemical agent. The fluorescent staining dye stock solution should be handled with particular caution because the solvent is known to facilitate the entry of organic molecules into tissues. **There is no data that addresses** the mutagenicity or toxicity of the fluorescent dye in humans. However, the fluorescent dye binds to nucleic acids, thus it should be used with appropriate care.

How to work with this product?

Different staining methods for using the **Safe Stain**

1: Add in gel method

This protocol is more recommended.

1. Prepare molten agarose gel solution using your standard protocol.

2. Dilute **Safe Stain** with the molten gel solution at about 30 ^{o}C and mix well prior to being poured into the desired caste.

Notes:

- Cool the molten agarose gel until it can be handled by hand.
- The agarose gel solution will have a slight yellow appearance which is correlated to the dye strength.
- Casted gels are stable at 4°C for 3 days in dark. After three days the sensitivity will decrease daily. However the fresh use of the **Safe Stain** is always suggested.

3. Perform agarose gel electrophoresis (avoid light).

Notes:

- The recommended voltage is 4–10 V/cm (distance between anode and cathode). Avoid using high voltage during electrophoresis. High voltage causes excess heat and affects the dye adversely.
- During electrophoresis, the staining dye runs toward the anode, therefore **DNA bands with smaller molecular weights may be weaker in intensity** due to less staining dye.

4. Use Gel duck to visualize or photograph the gel with UV or blue-light illumination (blue-light is recommended).

Notes:

- The surface of the illuminator should be clean before and after each use with DW. Accumulation of fluorescent dyes on the surface will create a high fluorescent background.
- Video cameras and CCD cameras have a different spectral response compared to the black-and-white print film and therefore may not exhibit the same sensitivity.

2: Staining during electrophoresis method:

The sensitivity of this method is slightly lower than the ***in-gel staining****.*

1. Dilute **Safe Stain** 10,000 folds into the running buffer during electrophoresis.
2. Perform agarose gel electrophoresis (avoid light).
3. Use Gel duck to visualize or photograph the gel with UV or blue-light illumination (blue-light is recommended).

Note: all details are as the 1st method.

3: Post-Staining method:

Post-staining method is recommended for polyacrylamide electro-phoresis, due to the longer time required for running PAGE. The sensitivity of this method is lower than the in-gel staining method.

1. Performing *polyacrylamide or* agarose gel electrophoresis.

2. Dilute **Safe Stain** stain 10,000 folds in a TE, TAE, or TBE buffer.

Notes:

- Pleas use a plastic container. Glass containers are not recommended, as they absorb fluorescent dye in staining solution.
- Buffered solutions increase the stability of fluorescent dye.
- Protect the staining container from light by covering it with aluminium foil, or place it in the dark. The staining solution can be stored for up to one week or more, but the fresh prepared staining bath is recommended.

3. Transfer the gel in a staining solution (1X) and incubate at room temperature for 10 - 30 minutes.

Note: Staining time varies with the thickness of the gel and percentage of agarose. If needed, agitate the gel gently at room temperature to shorten staining time.

4. Use Gel duck to visualize or photograph the gel with UV or blue-light illumination (blue-light is recommended).

Quality Control

In accordance with DNAbiotech Co. Management System, each part of the product tested against predetermined specifications to ensure consistent product quality**.**

Table 1: Comparison of different staining methods for using the Safe Stain*

The method of staining	Required Volume	Sensitivity	Quality
Add in gel	0.5 - 1 ul / 10 ml gel**	0.18 ngr	Excellent
During electrophoresis	25 ul in tank	0.65 ng	Very Fine
Post-Staining	10 ul***	0.65 ng	Fine

* Sensitivity is evaluated according to the 100 bp-3 kb bands of DNA ladder.
**Acording to the quality of the agarose and buffer system.
*** The usual post staining buffer volume is 100 ml.

DNAbiotech is the 1st Iranian Biotechnology Company producing wide ranges of ready to use **molecular buffers**. These products are produced from the high quality ingredients and help researchers run their projects faster.

Other products & services:

- ✓ Cloning and expression of different recombinant peptides
- ✓ Gene, Primer and peptide synthesizing
- ✓ Bioinformatics services
- ✓ Production of column based DNA extraction kits.
- ✓ Production of secondary antibodies (goat anti mouse, anti rabbit and anti human antibodies, HRP conjugated).
- ✓ Taq polymerase and PFU master mix
- ✓ Molecular grade buffers (TAE, TBE, RIPA and….)
- ✓ And ….

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