



SMOBIO

Small Bio, Smart Tool

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Product Information

FluoroStain DNA Fluorescent Staining Dye

DS1000	500 μ l x 1 (Green, 10,000X)
DS1001	500 μ l x 5 (Green, 10,000X)

Storage

Protected from light

-20°C \geq 24 months

Working Reagent Preparation

1:10,000 dilution in TE, TAE or TBE buffer

Description

The FluoroStain DNA Fluorescent Staining Dye is designed to be a safer replacement for the conventional Ethidium bromide (EtBr) which poses a significant health and safety hazard for the user.

The FluoroStain DNA Fluorescent Staining Dye offers a safer alternative to EtBr as well as at least 10 times its sensitivity in DNA detection level, capable of detecting double stranded DNA (dsDNA) fragments up to 0.1 ng in electrophoresis (Fig.1) analysis.

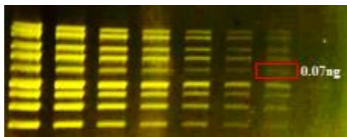


Fig. 1

The FluoroStain DNA Fluorescent Staining Dye shows a high specificity to the dsDNA, with negligible background signal, making destaining process entirely optional.

FluoroStain DNA Fluorescent Staining Dye is compatible with both the conventional ultra violet gel-illuminating system as well as the less harmful long wave length blue light illumination system. FluoroStain emission when bound to dsDNA is 522 nm, while its excitation peaks are at 270, 370 and 497 nm (Fig2).

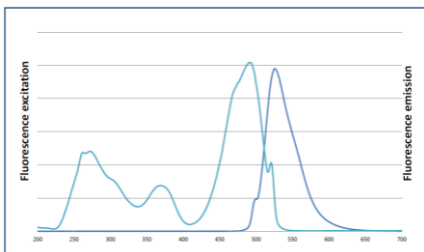


Fig. 2

Contents

Fluorescent Dye is stored 10,000X concentration.

Cautions

Before opening, vortex and thoroughly spin down the content of the vial. Warm to ambient temperature to ensure that the solution is thawed thoroughly and the solution is homogeneous

The fluorescent staining dye stock solution should be handled with particular caution because solvent is known to facilitate the entry of organic molecules into tissues.

There is no data that address the mutagenicity or toxicity of the fluorescent dye in humans. However, the fluorescent dye binds to nucleic acids, thus it should be recognized as a potential mutagen and used with appropriate care.

Dispose of the stain in compliance with local regulations.

Experimental Protocols

Staining DNA following electrophoresis

1. Perform electrophoresis on an agarose gel
 - The FluoroStain DNA Fluorescent Staining Dye is compatible with TAE (40 mM Tris-acetate, 1 mM EDTA, pH 8), TBE (89 mM Tris base, 89 mM boric acid, 1 mM EDTA, pH 8) and TE (20 mM Tris base, 1 mM EDTA, pH 8) buffers.
2. Dilute the stock FluoroStain DNA Fluorescent Staining Dye reagent 1:10,000.
 - Stock stain can be diluted in TE, TAE or TBE buffer.
 - As diluted in water, it should be used within 24 hrs. Buffered solution may increase the stability for this fluorescent staining dye.
3. Immerse the gel in staining solution (1x) and incubate at room temperature for 10 - 30 minutes.
 - Use a plastic container. The glass container is not recommended, as it adsorbs much of dye in staining solution.
 - Protect the staining container from light by covering it with aluminium foil or place it in the dark.

- Staining time will vary with the thickness of the gel and percentage of agarose. If needed, agitate the gel gently at room temperature to shorten staining time.
 - No destaining required.
 - The staining solution may be stored in the dark at low temperature for a week or more.
4. Visualize or photograph the gel with UV or blue-light illumination.
- It is important to clean the surface of the epi-illuminator or trans-illuminator after/before each use with deionized water. Otherwise, fluorescent dyes will accumulate on the surface and cause a high fluorescent background.
 - Video cameras and CCD cameras have a different spectral response compare to the black-and-white print film and thus may not exhibit the same sensitivity.

Precasting Gels with FluoroStain DNA Fluorescent Staining Dye

The FluoroStain DNA Fluorescent Staining Dye can also be applied in precast agarose gels. This fluorescent dye stock solution was diluted by 1:10,000 into gel solution just prior to pouring the gel.

However, the DNA detection limit for precast agarose gel may be slightly higher than that for gel stained after electrophoresis. In addition, the rate of migration of DNA fragments in precast gel with fluorescent stain may be significantly slower than that in a gel without dye. **We therefore suggest that apply gel staining after electrophoresis instead of precasting the gel with staining dye.**

Quality Control

Staining according to DS1000 standard protocol, all bands of 0.5 μ l DM3100 must be visible when separated on a 1% agarose gel with 0.5x TAE buffer under B-Box 470 nm blue light illumination.

Other information

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Caution: Not intended for human or animal diagnostic or therapeutic uses.

Related Products

DM1160	FluoroBand 50bp Fluorescent DNA ladder, 500 μ l
DM2160	FluoroBand 100bp Fluorescent DNA ladder, 500 μ l
DM2360	FluoroBand 100bp +3K Fluorescent DNA ladder, 500 μ l
DM3160	FluoroBand 1KB (0.25-10 kb) Fluorescent DNA ladder, 500 μ l
DM3260	FluoroBand 1KB Plus (0.1-10 kb) Fluorescent DNA ladder, 500 μ l
DM4160	FluoroBand XL 25KB Fluorescent DNA ladder Broad Range (up to 25 kb), 500 μ l
DL5000	FluoroDye DNA Fluorescent Loading Dye (Green, 6 \times), 1 ml
DL5001	FluoroDye DNA Fluorescent Loading Dye (Green, 6 \times), 1 ml \times 5
TF1000	ExcelTaq SMO-HiFi DNA Polymerase, 5 U/ μ l, 500 U \times 1
TP1000	ExcelTaq DNA Polymerase, 500 U \times 1
TP1100	ExcelTaq 5 \times PCR Master Mix, 200 RXN
TP1200	ExcelTaq 5 \times PCR Master Dye Mix, 200 RXN
TP1260	ExcelTaq 5 \times Fluorescent PCR Master Mix, 200 RXN

- TP2000 ExcelTaq Blood Direct DNA Polymerase,
5 U/ μ l, 500 U \times 1
- TP2100 ExcelTaq Blood Direct PCR Master Mix Kit,
200 RXN
- PS1000 FluoroStain Protein Fluorescent Staining
Dye (Red, 1,000X), 1 ml
- PS1001 FluoroStain Protein Fluorescent Staining
Dye (Red, 1,000X), 1 ml \times 5
- VE0100 B-BOX™ Blue Light LED epi-illuminator, AC
100-240V, 50/60Hz



B-BOX™ Blue Light LED epi-illuminator

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