GRGreen Nucleic Acid Gel Stain, 10,000X in Water

Catalog #: IV-1071 Store at 4 °C

Lab Supply Mall
http://www.labsupplymall.com

Introduction

GRGreen is a nucleic acid stain for detecting nucleic acids in agarose gel. It can be used for replacing mutagenic ethidium bromide (EB).

Compared to EB which is a very strong mutagen, GRGreen caused fewer mutations than EB in the Ames test.

Features:

- Available at 10,000X in H2O for better safety.
- Compatible with UV or blue light transilluminator and common gel documentation systems.
- Will not affect downstream experiments: compatible with all gel purification kits tested, will not inhibit ligation reaction etc
- Compatible with Sodium or Lithium Borate Fast Electrophoresis Buffer: Run gel 2-3 times faster at higher voltage, resolve shaper bands in minutes, and less heat generation.
- Cut out DNA bands for subclonning under safer blue light: No mutations caused by EB and UV light.

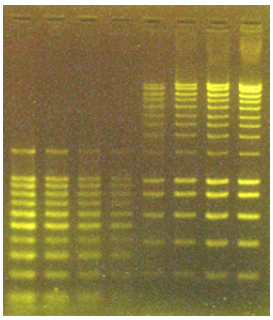
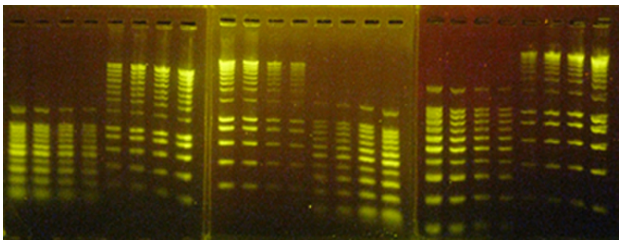


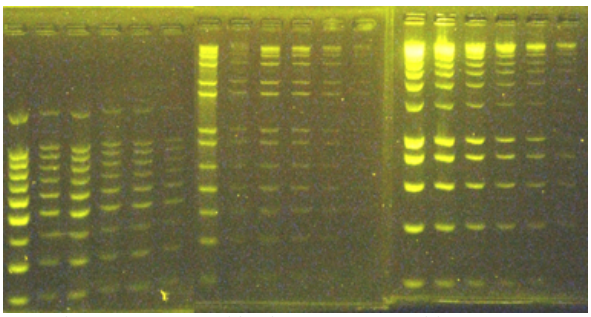
Fig. 1 Sensitivity of GRGreen DNA Stain.
1% agarose gel prepared with SeaKem LE Agarose (Lonza) and 1X GRGreen. 75V, 0.5X TAE.

Lefe: 100 bp DNA ladder, 250ng, 125 ng, 62.5 ng and 31.3 ng, total ng DNA per lane.
Right: 1kb DNA ladder, 31.3 ng, 62.5 ng, , 125 ng, and 250ng total ng DNA per lane.

Camera: Canon Powershot A650, ISO1600, 1 second exposure.
Darkreader and camera filter from Clare Chemicals.



TAE TBE Sodium Borate
Fig. 2, GRGreen is compatible with three common agarose electrophoresis buffers



100 bp 1 kb Plus 1 kb

Fig. 3, Best resolution can be achieved using Lithium Borate Fast Electrophoresis Buffer.

Storage: Store at 4 °C or -20 °C.

Disposal:

Gel: Biosafety trash bag.
TAE, TBE or Sodium/Lithium Borate Buffers: sink or consult a chemical safety officer at your institution.

Protocol

1. Prepare 20 to 40 ml of agarose gel solution (concentration from 0.7~2.0%) with TAE, TBE, Sodium or Lithium Borate Fast Electrophoresis Buffer in a 250 ml flask and mix it thoroughly. Place the flask in the microware, heat on high until the solution is completely clear and no small floating particles are visible (about 2~3 minutes).

2. After the gel solution cool to about 60 °C, add GRGreen to the solution to 1X final

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concentration. Swirl the flask gently to mix the solution and avoid forming bubbles.

3. Pour the gel solution into a gel tray until the comb teeth are immersed about 1/4~1/2 into the gel solution.

4. After the agarose gel has solidified you can perform electrophoresis using either 0.5 to 1X TAE, TBE, Sodium or Lithium Borate Fast Electrophoresis Buffer.

5. Detect the bands using UV or blue light transilluminator.

FAQ

1, Should I wear gloves when using this dye?
You should exercise common safe laboratory practices when using this reagent.

2, What blue light transilluminator should I used with GRGreen dye?
DarkReader.

3, What camera filter should I use for blue light transilluminator?
Filter from Clare Chemical.

4, What is the recipe of Lithium Borate Fast Electrophoresis Buffer?

20X: To 950 mL of dH2O, add 8.392 g of lithium hydroxide monohydrate and 36 g of boric acid, pH should be near 8.2.

5, What is the best Loading Buffer for GRGreen?

10X or 6X: 15% (w/v) Ficoll 400, 0.1% Orange G (Sigma O3756), 0.1% Cresol Red (Sigma 114480), in Ultra-Pure water, filter through 0.22 micron filter. Stored at 4 °C.
Do not add EDTA or Tris.