

GelRed® and GelGreen®

The most safe and sensitive nucleic acid gel stains

GelRed® and GelGreen® are safe nucleic acid gel stains designed to replace highly toxic ethidium bromide (EtBr) and other so-called safe gel stains. These gel stains are non-toxic and non-mutagenic by virtue of being cell membrane impermeable. Ames tests have confirmed that GelRed® and GelGreen® are nonmutagenic at concentrations well above the concentrations used for gel staining. Furthermore, environmental safety tests showed that GelRed® and GelGreen® are non-toxic to aquatic life, permitting disposal down the drain or in regular trash.

For more information and references, download our white paper, Comparison of Nucleic Acid Gel Stains: Cell Permeability, Safety, and Sensitivity and the complete Safety Report of GelRed® and GelGreen® at www.biotium.com.

Dye Advantages

- Non-toxic and non-mutagenic
- Safer than EtBr and other so-called safe gel stain
- Ultra-sensitive and stable
- Simple to use
- Easy disposal, okay for drain disposal by EPA Title 22 hazardous waste test
- Compatible with downstream applications, such as cloning and sequencing



Figure 1. GelRed® and GelGreen® gel stains are safer because they cannot penetrate cell membranes to bind DNA in living cells. HeLa cells were incubated with 1X SYBR® Safe, GelGreen® or GelRed®, respectively. Images were taken following incubation with dye for 30 min using FITC filter set for SYBR® Safe and GelGreen®, and Cy®3 filter set for GelRed®. SYBR® Safe rapidly entered cells and stained nuclei. GelRed® and GelGreen® were unable to cross cell membranes, demonstrated by the absence of fluorescence staining.

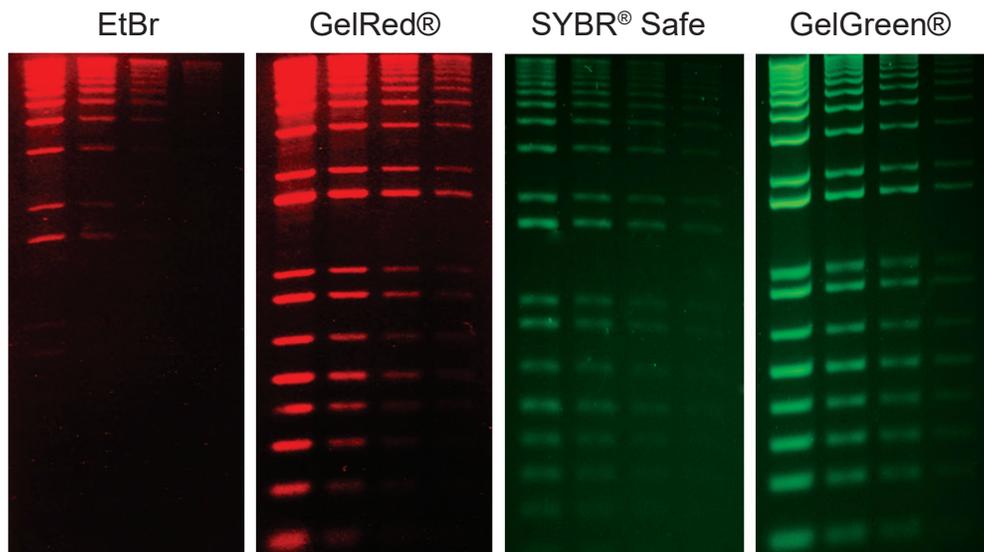


Figure 2. GelRed® and GelGreen® are more sensitive than EtBr and SYBR® Safe. Left: Comparison of GelRed® and ethidium bromide (EtBr) in precast gel staining using 1% agarose gel in TBE buffer. Right: Comparison of GelGreen® and SYBR® Safe in post gel staining using 1% agarose gel in TBE buffer.

GelRed® products for greater convenience and safety

GelRed® Prestain Plus 6X DNA Loading Dye

- 6X loading dye that includes GelRed® DNA stain
- Combine gel loading and DNA staining in one step
- Two blue tracking dyes that run at ~1.5 kb and ~200 bp in 1% agarose

GelRed® Agarose LE

- Agarose that is pre-coated with GelRed® dye
- Simplifies the preparation of precast gels
- No need to handle concentrated dye solutions, for enhanced safety
- Use with TAE or TBE for 0.8% to 2% gels
- Low EEO, ultrapure molecular biology grade agarose

3X GelRed® in Water

- Ready-to-use for post-electrophoresis gel staining
- Supplied in a 4L Cubitainer®
- No need to handle concentrated dye solutions, for enhanced safety



GelRed® Agarose LE



3X GelRed® in Water

Ordering Information

| Cat. # | Product Name |
|-------------|---|
| 41003-T | GelRed® Nucleic Acid Gel Stain; 10,000X in water, 0.1 mL |
| 41003 | GelRed® Nucleic Acid Gel Stain; 10,000X in water, 0.5 mL |
| 41003-1 | GelRed® Nucleic Acid Gel Stain; 10,000X in water, 10 mL |
| 41002 | GelRed® Nucleic Acid Gel Stain; 10,000X in DMSO, 0.5 mL |
| 41002-1 | GelRed® Nucleic Acid Gel Stain; 10,000X in DMSO, 10 mL |
| 41001 | GelRed® Nucleic Acid Gel Stain; 3X in water, 4 L |
| 41029-5G | GelRed® Agarose LE, 5 g |
| 41029-50G | GelRed® Agarose LE, 50 g |
| 41011 | GelRed® Prestain Plus 6X DNA Loading Dye, 1 mL |
| 41005-T | GelGreen® Nucleic Acid Gel Stain; 10,000X in water, 0.1 mL |
| 41005 | GelGreen® Nucleic Acid Gel Stain; 10,000X in water, 0.5 mL |
| 41005-1 | GelGreen® Nucleic Acid Gel Stain; 10,000X in water, 10 mL |
| 41004 | GelGreen® Nucleic Acid Gel Stain; 10,000X in DMSO, 0.5 mL |
| 41030-5G | GelGreen® Agarose LE, 5 g |
| 41030-50G | GelGreen® Agarose LE, 50 g |
| 41008-T | PAGE GelRed® Nucleic Acid Gel Stain; 10,000X in water, 0.1 mL |
| 41008-500uL | PAGE GelRed® Nucleic Acid Gel Stain; 10,000X in water, 0.5 mL |
| 41014 | PAGE GelRed® Nucleic Acid Gel Stain; 1X in water, 4 L |

Nucleic acid gel stain for polyacrylamide gels

The safety profile of the original GelRed® dye is in part due its large size, which makes the dye impermeable to cell membranes. However the large dye size reduces penetration of GelRed® into densely packed polyacrylamide gels. In designing PAGE GelRed® dye, we used a novel approach to make the dye membrane impermeable without making the dye large.

PAGE GelRed® Nucleic Acid Gel Stain

- A safe and sensitive gel stain for polyacrylamide gels
- Non-toxic and non-mutagenic in AMES test
- Formulated in water and impermeable to latex and nitrile gloves
- Non-toxic to aquatic life, okay for drain disposal by EPA Title 22 hazardous waste test