

# SUSTAINABLE AND SAFER DNA RESEARCH

## Ethidium Bromide Alternatives

Make DNA research safer for lab staff – while simultaneously reducing hazardous waste – by using GelRed or SYBR Safe as ethidium bromide alternatives.

These products are widely used and can safely be washed down a sink drain, whereas ethidium bromide has to be disposed of as hazardous waste and is a health hazard, especially for pregnant women.

### GELRED

GelRed is a stable, non-hazardous, and environmentally safe fluorescent nucleic acid dye designed by Biotium to replace toxic ethidium bromide (EtBr)

- **Highly sensitive** - GelRed is much more sensitive than EtBr (see Figure 1) and can be used with existing EtBr UV imaging systems.
- **Just 2 uL per gel** is enough for precast or post gel electrophoresis to obtain superior results.
- **Stability**
  - Photo-stable and stable when microwaved
  - No DNA mutations are reported
- **Non-toxic**
  - Does not penetrate through gloves
  - Non permeable through cell membranes
  - Non-mutagenic and non-cytotoxic

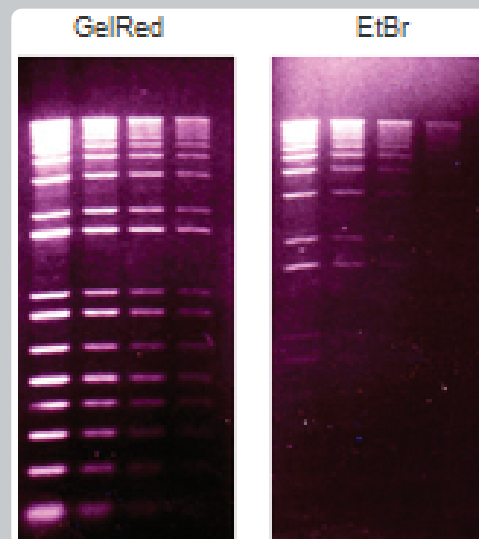
Please contact [sustainable-labs@umich.edu](mailto:sustainable-labs@umich.edu) for a free GelRed sample.

### SYBR SAFE

SYBR Safe DNA Gel Stain is a highly sensitive stain for visualization of DNA in agarose or acrylamide gels. SYBR Safe stain is formulated to be a less hazardous alternative to EtBr that can be used with either blue-light or UV excitation.

SYBR Safe stain is supplied as either a concentrate or a ready-to-use solution that can be used like an EtBr solution. The stain is also suitable for staining RNA in gels.

Note: GelRed and SYBR Safe are the only EtBr alternatives approved for disposal in sink drains into the Ann Arbor wastewater system.



**FIGURE 1.**

GelRed is more sensitive than EtBr.

“The Michigan Medicine Molecular Genetics Laboratory replaced Ethidium bromide with Gel Red. We run thousands of agarose gels using Gel Red per year and have found that Gel Red is equally effective for staining genomic DNA, digested genomic DNA, PCR amplicons, and Methylation-sensitive PCR products. Using our validated clinical protocol, Gel Red has increased the level of safety in the laboratory, increased the sensitivity in detecting products, decreased the operating costs associated with running gels, and significantly decreased the amount of hazardous waste that we were collecting.”

*Todd Ackley  
Manager, Michigan Medical Genetics  
Laboratories, U-M Health*

Join the many U-M researchers who have found success with EtBr alternatives and help create a safer, more sustainable workplace!