biotium Glowing products for science

Call us : 800-304-5357

GelRed® Agarose LE

Ultrapure molecular biology grade agarose pre-coated with GelRed® Nucleic Acid Gel Stain for convenient and safer preparation of precast gels.

Product attributes

Assay type/options	DNA/RNA gel staining

Product Description

GelRed® Agarose LE is our ultra-pure molecular biology grade LE agarose pre-coated with GelRed® Nucleic Acid Gel Stain. With GelRed® Agarose, there is no need to handle concentrated fluorescent dye while preparing your gel, for greater convenience and safety.

- Non-toxic GelRed® DNA/RNA dye is already in the agarose
- 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

GelRed® Agarose LE has low electroendosmosis (EEO) for high electrophoretic mobility. This agarose has excellent performance for analytical or preparative nucleic acid electrophoresis and blotting. It is suitable for preparing 0.8%-2% gels in TAE or TBE buffer. In a 1% GelRed® Agarose gel, the final GelRed® concentration is 1X, just like in our standard precast protocol. GelRed® Agarose also gives excellent results at percentages between 0.8% (0.8X GelRed®) up to 2% (2X GelRed®).

GelRed®: A Superior Replacement for EtBr

GelRed® and EtBr have virtually the same spectra, so you can directly replace EtBr with GelRed® without changing your existing imaging system. In addition, GelRed® is far more sensitive than EtBr. GelRed® can be used to stain dsDNA, ssDNA or RNA, however GelRed® is twice as sensitive for double-stranded than single-stranded nucleic acids. Gel staining with GelRed® is compatible with downstream applications such as sequencing and cloning. GelRed® can be removed from DNA using a gel extraction kit, or by phenol/chloroform extraction followed by ethanol precipitation. To learn more, see the GelRed® technology page, or GelRed® FAQs.

Non-Mutagenic and Safer for the Environment

GelRed® was subjected to a series of tests at Biotium and by three independent testing services to assess the dye's safety for routine handling and disposal. Test results confirm that the dye is impenetrable to both latex gloves and cell membranes. The dye is non-cytotoxic and non-mutagenic at concentrations well above the working concentrations used in gel staining. Using GelRed® Agarose further minimizes risk by avoiding the need to handle concentrated dye solution. GelRed® successfully passed environmental safety tests in compliance with CCR Title 22 Hazardous Waste Characterization, under which GelRed® is classified as non-hazardous waste. See the GelRed® and GelGreen® Safety Report.

Choose the Right Stain for Your Application

Product / Method	Procedure	Advantages	Disadvantages	Recommended for
DNA staining with EMBER™ Ultra DNA Gel Kit	Agarose is supplied pre-coated with EMBER™ Ultra Dye, just dissolve, heat, and pour.	• Safer and more convenient, no need to handle concentrated dye • Superior sensitivity, detect as little as ≤1 ng DNA • No need for post-electrophoresis staining • Optimal for blue LED gel imagers	• Not suitable for PAGE, DGGE, EMSA, or PFGE gels • Dye may cause band migration issues when loading larger amounts of DNA (more than ~200 ng/band), or for some restriction digests	• Routine agarose gels

Product / Method	Procedure	Advantages	Disadvantages	Recommended for
RNA staining with EMBER™ Ultra RNA Gel Kit	Agarose is supplied pre-coated with EMBER™ Ultra Dye, just dissolve, heat, and pour.	• Safer and more convenient stain for RNA, no need to handle concentrated dye • Superior sensitivity, detect as little as ≤5 ng RNA • No need for post-electrophoresis staining • Included loading dye contains formamide for denaturing • Optimal for blue LED gel imagers	• Will stain DNA as well as RNA • Dye may cause band migration issues when loading larger amounts of RNA (more than ~200 ng/band)	• Routine RNA gel electrophoresis • Evaluate total RNA integrity and DNA contamination
DNA prestaining with GelRed® Prestain Plus 6X DNA Loading Dye	GelRed® loading buffer is added directly to the DNA sample before loading	• Fast & simple: one-step sample loading & DNA staining • Less concentrated dye for safer handling • Can re-run a gel to use empty lanes	• Not recommended for PAGE, DGGE, EMSA, or PFGE gels • Dye may cause band migration issues when loading larger amounts of DNA (more than ~100 ng/band), or for some restriction digests	• Routine agarose gels • Recommended loading 50-200 ng ladder or 2-5 uL PCR product (~100 ng/band or less)
Precast staining with GelRed® 10,000X in water or GelGreen® 10,000X in water	GelRed® or GelGreen® is mixed with molten agarose before gel casting	Familiar protocol, rapid results		
Precast staining with GelRed® Agarose LE or GelGreen® Agarose LE	Agarose is supplied pre-coated with GelRed® or GelGreen®, just dissolve, heat, and pour	Safer & more convenient, no need to handle concentrated dye		
Post-electrophoresis staining with GelRed® 10,000X in water or GelGreen® 10,000X in water - or - GelRed® 3X in water	No fluorescent dye is added to the gel, it is stained in 3X GelRed® or 3X GelGreen® solution after electrophoresis	• Most accurate sizing/sharpest bands • Staining solution can be re-used • Enhance sensitivity by adding NaCl	Extra staining step (up to 30 minutes) after electrophoresis (some customers report good results after only 5 minutes if dye is not reused)	• Highly accurate band sizing • Gels with more than ~100 ng DNA per band • Analyzing restriction digests
Post-electrophoresis staining of PAGE gels using PAGE GelRed® 10,000X or 1X in water	No fluorescent dye is added to the gel, it is stained in 1X PAGE GelRed® solution after electrophoresis	• Formulated for efficient penetration and staining of polyacrylamide gels • Like the classic GelRed®, it is safe and environmentally friendly	Extra staining step of approx. 30 minutes after electrophoresis	Staining of nucleic acids in PAGE gels

Also see GelGreen® Nucleic Acid Gel Stain, a safer replacement for SYBR® gel stains, which is compatible with visible light excitation. Biotium also offers the Gel-Bright™ Laser Diode Gel Illuminator, a unique laser-diode-based illuminator that offers sensitive staining for both red and green dyes. Also learn about our Go-Go™ Fast DNA Gel Running Buffer for running gels 3X faster than with TAE or TBE buffer.

We also offer GelGreen® Agarose LE and unlabeled Agarose LE, Ultrapure Molecular Biology Grade.

References

Download a list of selected References for GelRed® and GelGreen®.