

PAGE GelRed® Nucleic Acid Gel Stain

PAGE GelRed® is a non-toxic, non-mutagenic red DNA gel stain specifically formulated to stain DNA in polyacrylamide gels. PAGE GelRed® can be imaged using a 254 nm UV transilluminator with an ethidium bromide filter.



Product attributes

Format	10,000X in water, 1X in water
Excitation/Emission	551/625 nm (with dsDNA)
DNA/RNA dye	DNA dye
Storage Conditions	Store at room temperature, Protect from light
Assay type/options	DNA/RNA gel staining

Product Description

PAGE GelRed® is an ultra sensitive, extremely stable, and environmentally safe fluorescent nucleic acid dye specifically designed to stain DNA in polyacrylamide gels.

- Superior dsDNA staining in polyacrylamide gels
- Formulated for efficient penetration of polyacrylamide gel
- Safer than EtBr: non-mutagenic and non-hazardous for disposal
- Simple pre- and post-electrophoresis gel staining, no destaining
- Use with standard EtBr imaging equipment or optical settings
- Compatible with downstream gel purification, restriction digest, sequencing, and cloning

PAGE GelRed® is a non-toxic, non-mutagenic red DNA gel stain specifically designed to stain DNA in polyacrylamide gels. It can be imaged using a 254 nm UV transilluminator with an ethidium bromide filter and can be removed from DNA gel staining using commonly available gel extraction kits. PAGE GelRed® is 6-8 times more sensitive for dsDNA over RNA. PAGE GelRed® is offered at 10,000X and 1X concentrations. Only the highly concentrated, 10,000X in water, can be used for pre-casting. While both concentrations of PAGE GelRed® can be used as a post-electrophoresis gel stain, 1x PAGE GelRed® is supplied in a 4L Cubitainer® as a convenient and easily dispensed, ready-to-use post-stain.

PAGE GelRed®: A Superior Dye for Polyacrylamide Gels

The original GelRed® and GelGreen® dyes, the dyes' membrane impermeability was achieved by mainly making the dyes physically large. While this strategy works extremely well to improve the dyes' safety, the relatively large size of GelRed® and GelGreen® make the dyes difficult to penetrate into the more densely packed polyacrylamide gels, rendering the dyes less optimal for PAGE gel staining.

In designing PAGE GelRed®, we used a novel approach to make the dye membrane impermeable without making the dye large. As a result, PAGE GelRed readily stains dsDNA in densely packed polyacrylamide gels. Importantly, the dye still possesses the benefits that the Original GelRed® is known for; safety, sensitivity, stability, and compatibility with existing instruments and downstream sample analysis. Also see our GelRed® and GelGreen® [Frequently Asked Questions \(FAQs\)](#).

Non-Mutagenic and Safer for the Environment

A series of safety tests have confirmed that PAGE GelRed® is non-cytotoxic, non-mutagenic, and non-hazardous at concentrations well above the working concentrations used in gel staining. As a result, working strength PAGE GelRed® can be safely disposed of down the drain or in regular trash, providing convenience and reducing cost in waste disposal. For detailed test results, you may download the [PAGE GelRed® Safety Report](#).

How Safe is Your Gel Stain?

Many so-called "safe" DNA dyes like SYBR® Safe, Midori Green, GreenSafe, SafeView™, and RedSafe™ not only have low sensitivity, but also readily penetrate living cells to bind DNA, and some are cytotoxic. Unlike these dyes, GelRed® is cell membrane-impermeant, so it cannot enter living cells to interact with their DNA. See our [Gel Stains Comparison Flyer](#) or [Gel Stains Comparison White Paper](#) for details.

Choose the Right Stain for Your Application

PAGE GelRed® Nucleic Acid Gel Stain is the recommended stain for staining DNA in polyacrylamide gels. While PAGE GelRed® can be used to stain DNA in agarose gels but will be less sensitive than Original GelRed®. For pre-cast gel staining, only the highly concentrated dye solution, 10,000X in water, can be used by adding the dye directly to molten agarose. While both concentrations of PAGE GelRed® can be used as a post-electrophoresis gel stain, 1X PAGE GelRed® is supplied in a 4L Cubitainer® as a convenient and easily dispensed, ready-to-use post-stain.

For agarose gels, we recommend using [Original GelRed® Nucleic Acid Gel Stain](#) or [GelGreen® Nucleic Acid Gel Stain](#). While PAGE GelRed® can be used to stain DNA in agarose gels, it will be less sensitive than the Original GelRed®. GelRed® 3X in water is ready-to-use for post-electrophoresis gel staining, and is supplied in a 4L Cubitainer®. Higher concentrations of Original GelRed® are available as 10,000X in water or DMSO. GelRed® in water is a newer, safer formulation and our recommended format. We continue to offer GelRed® in DMSO for established users who do not wish to alter their protocols. We also offer [GelRed® Agarose](#) and [GelRed® PreStain Plus 6X Loading Dye](#). GelGreen® Nucleic Acid Gel Stain, a safer replacement for SYBR® gel stains, which is compatible with visible light excitation. For more information, view our [DNA Gel Stains Technology Page](#).

Product / Method	Procedure	Advantages	Disadvantages	Recommended for
DNA staining with EMBERT™ Ultra DNA Gel Kit	Agarose is supplied pre-coated with EMBERT™ Ultra Dye, just dissolve, heat, and pour.	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Routine agarose gels
RNA staining with EMBERT™ Ultra RNA Gel Kit	Agarose is supplied pre-coated with EMBERT™ Ultra Dye, just dissolve, heat, and pour.	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Will stain DNA as well as RNA • Dye may cause band migration issues when loading larger amounts of RNA (more than ~200 ng/band) 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Fast & simple: one-step sample loading & DNA staining • Less concentrated dye for safer handling • Can re-run a gel to use empty lanes 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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)	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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

GelRed® and its uses are covered by granted and/or pending US and International patents. GelRed and EvaGreen are registered trademarks of Biotium, Inc. SafeView is a trademark of Applied Biological Materials; RedSafe is a trademark of iNtRON Biotechnology. SYBR is a registered trademark of Thermo Fisher Scientific. Cubitainer is a registered trademark of Hedwin Corporation.

References

Download a list of curated [references for GelRed® and GelGreen®](#).

This datasheet was generated on May 8, 2026 at 06:45:14 AM. Visit product page to check for updated information before use.
Product link: <https://biotium-woo.supremeclients.com/product/page-gelred-nucleic-acid-gel-stain/>

