FAQ

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GelRed™ Nucleic Acid Gel Stain FAQ

Question	Answer
Can GelRed be used to stain ssDNA or RNA?	GelRed can be used to stain ssDNA and RNA, but it is twice as sensitive for dsDNA as for ssDNA or RNA.
Is GelRed compatible with downstream applications such as cloning, ligation and sequencing?	Yes. We recommend Qiagen or Zymoclean gel extraction kits or phenol-chloroform extraction to remove the dye from DNA. Some users have reported performing PCR on DNA in the presence of GelRed with no purification step, for example by incubating GelRed-stained gel slices in TE buffer to extract DNA by passive diffusion for use in PCR, or by using a few microliters of molten agarose from GelRed-stained gel slices containing DNA for PCR.
Can GelRed be used for formaldehyde, polyacrylamide, DGGE, EMSA or PFGE (pulse-field) gels?	Yes. Customers have reported using GelRed in glyoxal and formaldehyde agarose gels for precast staining of RNA. Use the post-staining protocol for polyacrylamide, DGGE, and EMSA gels. For PFGE gels, the pre-cast or post-staining protocol may be used.
Can GelRed be used for COMET assay?	Yes, GelRed can be used for COMET assay by post-staining.
Can GelRed be used in cesium chloride gradients?	Customers have reported using GelRed in cesium gradients. To extract GelRed from DNA after cesium banding, we recommend add SDS to a final concentration of 0.1% before butanol extraction. Alternatively, chloroform can be used instead of butanol for extraction.
Is GelRed compatible with Southern or northern blotting?	GelRed has been validated for Southern blotting (Plant Cell Report doi: 10.1007/s00299-011-1150-7). We recommend using the post-staining protocol for blotting applications.

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What loading buffers are compatible with GelRed?	We routinely use 6X loading buffer containing 15% glycerol, 7.5% Ficoll 400, 0.05% Bromophenol Blue, and 0.1% Patent Blue VF. In internal testing, 6X loading buffer containing 0.1% Orange G produced good results in precast and post-stained GelRed gels. SDS in loading buffer may contribute to band smearing in precast GelRed gels. If this occurs, we recommend using the post-staining protocol.
What emission filters are suitable for use with GelRed?	Use the ethidium bromide filter for GelRed. SYBR or GelStar filters also can be used for gel imaging with equally good results. Please review the emission spectra for GelRed for specific wavelengths.
Can I reuse a GelRed precast gel after electrophoresis?	We do not recommend reusing GelRed precast gels as signal decreases with subsequent electrophoresis.
How should I dispose of GelRed?	GelRed has passed the EPA regulated Title 22 test. Some facilities have approved the disposal of GelRed directly down the drain. However, because regulations vary, please contact your safety office for local disposal guidelines. GelRed can be adsorbed to activated carbon (also known as activated charcoal) for disposal as chemical waste.
What is the lower detection limit of GelRed?	Some users have reported being able to detect bands containing less than 0.1 ng DNA. However, the limit of detection will depend on instrument capability and exposure settings.
What is the binding mechanism of GelRed?	GelRed has been shown to bind DNA exclusively by intercalation (European Biophysics Journal doi: 10.1007/s00249-014-0995-4).
What is the chemical structure of GelRed?	The chemical structure of GelRed is proprietary.
Does GelRed migrate during Electrophoresis?	GelRed does not migrate through the gel as easily as EtBr. It is not necessary to add dye to the running buffer, and the gel will be stained more homogeneously with GelRed than with EtBr.
Does GelRed need to be used in the dark?	GelRed is very stable. You can use the dye in room light, however we recommend storing the dye in the dark.
I accidentally left my GelRed in the light. Will it still work?	While we recommend that you protect the dye from light during long term storage, we have had a customer report using GelRed with success after accidentally leaving it in ambient light for one month.

Is there a difference between 10,000X GelRed in DMSO and water?	The GelRed stock in water is a newer and improved product compared to the stock in DMSO. We recommend using GelRed in water to avoid the potential hazards of handling DMSO, a solvent that can be absorbed through the skin. We continue to offer GelRed in DMSO because some users do not wish to alter their established laboratory protocols.

Associated Products

GoldBio Catalog #	Product Name
A-201	Agarose LE (Molecular Biology Grade)
D010	1 kb DNA Ladder
D011	1 kb PLUS™ DNA Ladder
D001	100 bp DNA Ladder
P007	BLUEstain™ Protein ladder, 11-245 kDa
P008	BLUEstain™ 2 Protein ladder, 5-245 kDa
G-745	GelGreen™ Nucleic Acid Stain Gel Stain, 10,000X in Water
E-670	EvaGreen® Dye, 20x in Water