PRODUCT INFORMATION SHEET

Helixyte™ Green Nucleic Acid Gel Stain *10,000X DMSO Solution*

Catalog number: 17590, 17604
Unit size: 1 ml, 100 ul

Component	Storage	Amount (Cat No. 17590)	Amount (Cat No. 17604)
Helixyte™ Green Nucleic Acid Gel Stain *10,000X DMSO Solution*	Freeze (< -15 °C), Minimize light exposure	1 vial (1 mL)	1 vial (100 uL)

OVERVIEW

Helixyte™ Green is manufactured by AAT Bioquest, and it has the same chemical structure of SYBR® Green (SYBR® is the trademark of ThermoFisher). Helixyte™ Green is an excellent nucleic acid gel stain. It has the same spectral properties to those of SYBR® Green, thus a great replacement to SYBR® Green (SYBR® Green is the trademark of ThermoFisher). It is one of the most sensitive stains available for detecting double-stranded DNA (dsDNA) in agarose and polyacrylamide gels. Helixyte™ Green has much greater sensitivity for dsDNA, thus especially useful for assays where the presence of contaminating RNA or ssDNA might obscure results. Helixyte™ Green stain is ideal for use with laser scanners with the same instrument settings of SYBR Green. Helixyte™ Green is much more sensitive than ethidium bromide for DNA in agarose gels. The gels soaked in diluted Helixyte™ Green stain can be visualized without desalting. It is compatible with UV transilluminators, gel documentation systems, and laser scanners.

AT A GLANCE

Spectral Properties of Helixyte™ Green Nucleic Acid Gel Stain

Excitation/Emission: 497/521 nm when bound to DNA

Important Helixyte™ Green nucleic acid gel stain is significantly less mutagenic than ethidium bromide. However, we must caution that no data are available on the mutagenicity or toxicity of Helixyte™ Green stain in humans. It should be treated as a potential mutagen and used with appropriate care due to the fact that this reagent binds to nucleic acids. Dispose of the stain in compliance with local regulations.
We have found the greatest sensitivity is achieved by post-staining which also eliminates the possibility of dye interference with DNA migration. While the precast protocol is more convenient, some DNA samples may experience migration, it is highly recommend the gel running time does not exceed more than 2 hours. The following protocols are recommended. However some comparisons might be needed to determine which one better meets your needs.

PREPARATION OF WORKING SOLUTION

Helixyte™ Green working solution (1X)
Make 1X Helixyte™ Green working solution by diluting the 10,000X stock reagent into pH 7.5 - 8 buffer (e.g., TAE, TBE or TE, preferably pH 8.0).

Note Staining solutions prepared in water are less stable than those prepared in buffer and must be used within 24 hours to ensure maximal staining sensitivity.

Note In addition, staining solutions prepared in buffers with pH below 7.5 or above 8.0 are less stable and show reduced staining efficacy.

SAMPLE EXPERIMENTAL PROTOCOL

Post-Staining Protocol

1. Run gels based on your standard protocol.
2. Place the gel in a suitable polypropylene container. Gently add a sufficient amount of the 1X Helixyte™ Green working solution to submerge the gel.

   Note Do not use a glass container, as it will adsorb much of the dye in the staining solution.
3. Agitate the gel gently at room temperature for ~30 minutes, protected from the light.

   Note The staining solution can be stored in the dark (preferably refrigerated) for a week and reused up to 2 - 3 times.
4. Image the stained gel with a 254 nm transilluminator or a laser-based gel scanner using a long path green filter, such as a SYBR® filter or GelStar® filter.

Pre-Casting Protocol

1. Prepare agarose gel solution using your standard protocol.
2. Add 1X Helixyte™ Green working solution to the gel and mix thoroughly.
3. Run gels based on your standard protocol.
4. Image the stained gel with a 254 nm transilluminator or a laser-based gel scanner using a long path green filter, such as a SYBR® filter or GelStar® filter.

DNA-Staining Before Electrophoresis

1. Incubate DNA with a 1:3000 to 1:10,000 dilution of the dye (in TE, TBE, or TAE) for at least 15 minutes prior to electrophoresis.
2. Run gels based on your standard protocol.
3. Image the stained gel with a 254 nm transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter or GelStar® filter.

EXAMPLE DATA ANALYSIS AND FIGURES

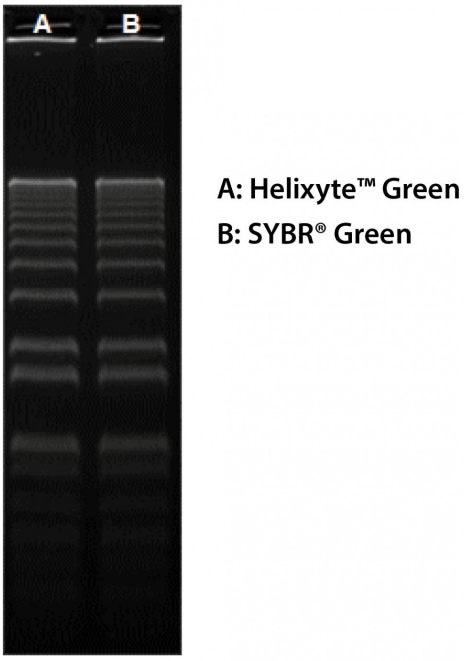

Figure 1. 160 ng of 1 Kb Plus DNA Ladder (ThermoFisher 10787018) in 0.9% agarose/TBE electrophoresis gel were stained with Helixyte™ Green and SYBR® Green and imaged with 254-nm UV transilluminator using UVP Bioimaging System.

DISCLAIMER

AAT Bioquest provides high-quality reagents and materials for research use only. For proper handling of potentially hazardous chemicals, please consult the Safety Data Sheet (SDS) provided for the product. Chemical analysis and/or reverse engineering of any kit or its components is strictly prohibited without written permission from AAT Bioquest. Please call 408-733-1055 or email info@aatbio.com if you have any questions.