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

Catalog number: 17595
Unit size: 1 ml

Component	Storage	Amount
Helixyte™ Orange Nucleic Acid Gel Stain *10,000X DMSO Solution*	Freeze (< -15 °C), Minimize light exposure	1 vial (1 mL)

OVERVIEW

Helixyte™ Gold is manufactured by AAT Bioquest, and it has the same chemical structure of SYBR® Gold (SYBR® is the trademark of ThermoFisher). Helixyte™ Gold is an excellent nucleic acid gel stain, and exhibits large fluorescence enhancement upon binding to nucleic acids. It has the same spectral properties to those of SYBR® Gold, thus a great replacement to SYBR® Gold (SYBR® Gold is the trademark of ThermoFisher). It is one of the most sensitive stains available for detecting DNA in agarose and polyacrylamide gels. Helixyte™ Gold has higher sensitivity for DNA than RNA, and is ideal for use with laser scanners with the same instrument settings of SYBR Gold. Helixyte™ Gold is much more sensitive than ethidium bromide for DNA in agarose gels, and it can detect as low as picogram dsDNA on gels.

AT A GLANCE

Spectral Properties of Helixyte™ Gold

Excitation/Emission: 495/540 nm

Important Helixyte™ Gold 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™ Gold 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. The disposing of the stain shall be 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 recommended 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™ Gold working solution (1X)
Make 1X Helixyte™ Gold 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™ Gold 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™ Gold 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 1:1000 to 1:3000 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

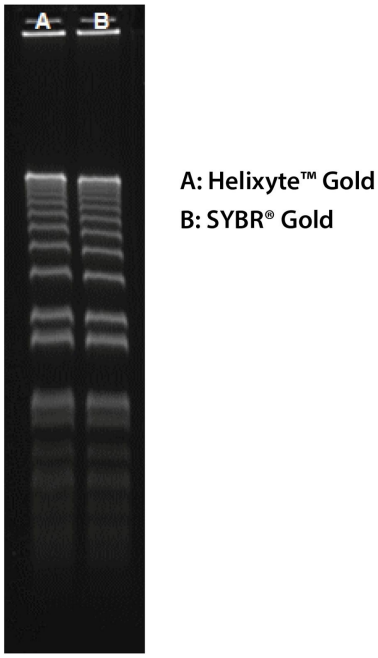

Figure 1. 160 ng of 1 Kb Plus DNA Ladder (ThermoFisher 10787018) in 0.9% agarose/TBE electrophoresis gel were stained with Helixyte™ Gold and SYBR® Gold and imaged with 254-nm UV transilluminator using UVP Bioimaging System.

DISCLAIMER

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