PRODUCT INFORMATION SHEET

Gelite™ X100 DNA Gel Stain *10,000X Water Solution*

Catalog number: 17700, 17701, 17702, 17703
Unit size: 100 ul, 500 ul, 1 ml, 10 ml

Component	Storage	Amount (Cat No. 17700)	Amount (Cat No. 17701)	Amount (Cat No. 17702)	Amount (Cat No. 17703)
Gelite™ X100 Nucleic Acid Gel Stain *10,000X Water Solution*	Freeze (< -15 °C), Minimize light exposure	100 µL	500 µL	1 mL	10 mL

OVERVIEW

AAT Bioquest is committed to designing our products to be environment friendly. It's part of how we enable our customers to make the world healthier, cleaner, and safer. Ethidium bromide (EtBr) has been commonly used as a DNA stain for many years. However, EtBr is harmful if swallowed, and is very toxic if inhaled. EtBr has been shown to be mutagenic in various tests and is an aquatic toxin. SYBR® Safe was introduced as a safer alternative to EtBr and SYBR® Green, but unfortunately it is much less sensitive than SYBR® Green. It only has sensitivity comparable to EtBr. Gelite™ X100 has been developed specifically to be less hazardous than EtBr for staining DNA in agarose and acrylamide gels with much higher sensitivity. Gelite™ X100 has greatly improved safety and uncompromised sensitivity. The exceptional sensitivity and strong DNA binding affinity of Gelite™ X100 allows for DNA to be stained prior to or post electrophoresis without destaining. In addition to its superior binding properties, Gelite™ X100 is essentially non-fluorescent in the absence of nucleic acids showing very low background fluorescence. Upon binding to nucleic acids, Gelite™ X100 exhibits a large fluorescence enhancement by several orders of magnitude greater than that of EtBr. Gelite™ X100 was optimized to be compatible with a variety of instruments including UV and blue-light transiluminators, gel documentation systems and laser scanners. It is the first single formulation that can be used either in green or red channel at your preference. Unlike the membrane-permeant SYBR® Green, which is highly toxic to cells and the environment, the membrane-impermeant properties of Gelite™ X100 make it a much safer and noncytotoxic alternative. Furthermore, Ames testing has confirmed Gelite™ X100 to be significantly less mutagenic than EtBr and SYBR® Green, even at concentrations well above the working concentration used for gel staining. Ames mutagenicity test was performed in a dose dependent manner for all test dyes pretreated with a S9 fraction from liver (SYBR® is a trademark of ThermoFisher).

KEY PARAMETERS

Gel Imager

Excitation	UV Transilluminator/Blue laser
Emission	SYBR® filter, GelStar® filter, GelGreen® filter, or GelRed® filter

PREPARATION OF WORKING SOLUTION

Gelite™ X100 working solution
Make 1X Gelite™ X100 working solution by diluting the 10,000X stock reagent with a buffer of your choice in a pH range of 7.5-8.5 (e.g., TAE, TBE or TE preferably pH 8.2).

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.

SAMPLE EXPERIMENTAL PROTOCOL

The following protocols are recommended. However, some comparisons might be made to determine which one better meets your needs.

Post-staining protocol

1. Run gels according to your standard protocol.
2. Place the gel in a suitable polypropylene container. Gently add a sufficient amount of the 1X staining 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 to 60 minutes. Protect the staining container from light.

   Note Destaining is not required. Image can be acquired without any wash steps.
4. Image the gel with a 300 nm/254 nm ultraviolet transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter, GelStar® filter, GelGreen® filter, or GelRed® filter.

Pre-staining protocol

1. Prepare agarose gel solution using your standard protocol.
2. Dilute the 10,000X Gelite™ X100 stock reagent into the gel solution at 1:10,000 just prior to pouring the gel and mix thoroughly.
3. Run gels according to your standard protocol.
4. Image the gel with a 300 nm/254 nm ultraviolet transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter, GelStar® filter, GelGreen® filter, or GelRed® filter.

EXAMPLE DATA ANALYSIS AND FIGURES

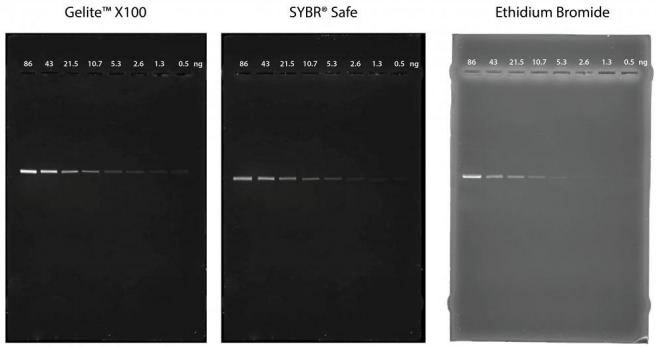

Figure 1. Comparison of DNA detection in 1% agarose gel in TBE buffer using Gelite™ X100, SYBR® Safe, and EtBr. Two-fold serial dilutions of 1 kb DNA ladder were loaded in amounts of 86 ng, 43 ng, 21.5 ng, 10.7 ng, 5.3 ng, 2.6 ng, 1.3 ng, and 0.5 ng from left to right. Gels were imaged using a 300 nm transilluminator in ChemiDoc™ Imaging System (Bio-Rad®).

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.