AIE-Gelgreen Nucleic Acid Stain (10,000X)

Cat. No/Spec.: M9101/0.5 ml

Description

AIE-Gelgreen (10000X) is a triphenylamine derivative based on Aggregation-Induced Emission (AIE) fluorescent materials, possessing typical AIE characteristics. It is a nucleic acid gel stain with high sensitivity, strong stability, broad applicability, and excellent compatibility, suitable for staining dsDNA, ssDNA, and RNA in agarose and polyacrylamide gels. AIE-Gelgreen exhibits extremely high sensitivity, with a detection limit down to the pg level, making it an ideal alternative to silver staining. It can produce clear and bright bands within 5 minutes, with simple operation and intuitive results. Its broad excitation spectrum is compatible with various imaging systems, allowing it to replace ethidium bromide (EB) and other gel stains without altering existing equipment. It is suitable for gel imaging and detection systems originally using nucleic acid stains such as SYBR Green or SYBR Gold. Moreover, AIE-Gelgreen can be used for nucleic acid detection with harmless blue light lamps or blue light imaging devices, avoiding the mutagenic effects of conventional UV detection on nucleic acid samples as well as the harm to the eyes and skin from UV exposure, making it an ideal choice for use with laser scanners.

Storage Conditions

Please store at 2-8°C, light protection is not required. The shelf life is 1 year.

Product Properties

Formula	$C_{33}H_{30}N_4O_2^{2+}$
Molecular Weight	514.63 g/mol
Purity	>95% (HPLC)
Working Concentration	5-10 μM
Maximum Absorption/Emission Wavelength (nm)	Ex=435 nm / Em= 580 nm

Application Scope

It is used for staining double-stranded DNA (dsDNA), single-stranded DNA (ssDNA), and RNA in agarose and polyacrylamide gel electrophoresis.

Product Features

1. High Sensitivity: Suitable for nucleic acid electrophoresis staining of fragments of various sizes, with sensitivity up to the picogram (pg) level;
2. Strong Stability: Can be heated in a microwave, and its effectiveness remains unaffected after more than one year of storage at room temperature;
3. Broad Compatibility: Matches standard gel imaging systems and visible light excitation gel observation devices;
4. Fast and Simple: Clear and bright bands can be obtained within 5 minutes of staining, without the need for destaining or rinsing;
5. Strong Operability: Maintains a high signal-to-noise ratio within a concentration range of 0.1X to 1X;
6. Broad Applicability: Suitable for agarose or polyacrylamide gel electrophoresis, capable of staining dsDNA, ssDNA, or RNA.

Staining Protocols

1. Precast Protocol for Agarose Gel

1.1 Prepare agarose gel according to your standard protocol;
1.2 Add the appropriate amount of AIE-Gelgreen to the melted agarose to make it 1X, mix thoroughly. Such as 50 ml agarose gel solution requires the addition of 5 μl 10,000X AIE-Gelgreen;
1.3 Pour the gel out and allow it to solidify;
1.4 Load samples and run the gels according to your standard protocol;
1.5 View the stained gel through the gel transilluminator and save photos.

2. Post-Staining Protocol

2.1 Run gels according to your standard protocol;
2.2 Dilute the 10,000X concentrated AIE-Gelgreen solution approximately 2500-fold with deionized water into a 0.1M NaCl solution to prepare a 2X staining solution. For example, add 15-20 µl of 10,000X AIE-Gelgreen to 45 ml of deionized water and then add 5 ml of 1M NaCl.
2.3 Put the gel in a suitable container, such as a polypropylene container, and add a sufficient amount of 2X staining solution to submerge the gel;
2.4 Shake the gel gently at room temperature for about 5 minutes;
Note: The staining time is related to the thickness of the gel and the concentration of agarose. For polyacrylamide gels with concentrations ranging from 3.5% to 10%, the staining time may be appropriately extended.
2.5 Observe the stained gel through a gel imaging system and take photos for record.

Precautions

1. Please mix briefly before use.
2. For your safety and health, please wear a lab coat and use disposable gloves when handling.

For research use only.