艾科瑞生物
Accurate Biology

Instruction for Use

AG-CelRed Nucleic Acid Gel Stain

AG11918
Version.V2E1

Research Use Only
Not For Diagnosis Procedures

1. Description

AG-CelRed is a novel nucleic acid dye designed as a safer alternative to ethidium bromide (EB). Its unique oil-like macromolecular structure prevents it from penetrating cell membranes, ensuring it does not enter living cells. Ames test results confirm that AG-CelRed exhibits no mutagenicity at concentrations used for gel staining.

When detecting nucleic acids via agarose gel electrophoresis, the dye can be visualized using standard UV gel imaging systems with the same filters and equipment used for EB. Nucleic acid bands stained with AG-CelRed appear red under UV transillumination, with optimal excitation near 300 nm.

This dye offers multiple advantages, including high sensitivity, low toxicity, and excellent thermal stability. It is particularly effective for detecting trace amounts of small DNA molecules. AG-CelRed is compatible with both agarose and polyacrylamide gel electrophoresis and is suitable for staining dsDNA, ssDNA, and RNA.

2. Kit Information

Kit Name	Cat. No	Specification
AG-CelRed Nucleic Acid Gel Stain	AG11918	500 µl

3. Transportation and Storage

Storage	Store at 4°C
Transportation	Transport at 4°C

4. Product Properties

AG-CelRed Nucleic acid gel stain (10000 ×)	500 µl

5. Precaution

1) Centrifuge the product before opening for the first time.
2) If nucleic acid bands appear diffuse or separation is suboptimal, use the post-staining method to confirm whether the issue is related to the dye. If the problem persists after staining, try re-preparing the samples and repeating the experiment. Consider the following adjustments for improvement:
   ① Lower the voltage and increase the electrophoresis time.
   ② Reduce the DNA loading amount (recommended range: 50–200 ng).
   ③ Use the post-staining method.
   ④ Adjust the gel concentration.
3) For post-staining, the staining solution can be reused approximately three times. AG-CelRed staining solution (3X) can be prepared in bulk and stored in the dark at room temperature for up to one week.
4) The gel-staining method is not suitable for pre-cast polyacrylamide gels. For polyacrylamide gels, use the post-staining method.
5) Pre-cast gels containing AG-CelRed can be prepared in bulk and stored at 4°C in the dark for up to one week.
6) AG-CelRed cannot be fully excited by 488 nm argon-ion lasers or similar visible-light excitation sources. Imaging systems using such devices are not recommended.

6. Protocol for Gel Preparation

Gel Staining Method

1) Prepare an agarose gel of the desired concentration. Calculate the required amount of agarose based on the gel concentration (e.g., for a 1% gel, dissolve 1 g of agarose in 100 ml of 1× TAE buffer). Heat the mixture in a microwave until the agarose is completely dissolved.
2) After slight cooling, add AG-CelRed to achieve a final concentration of 1× (e.g., add 10 µl of AG-CelRed to 100 ml of agarose solution).
3) (Note: AG-CelRed is highly thermally stable and can be added directly to hot agarose solution without waiting for it to cool. Shake gently to ensure thorough mixing after adding the dye.)
4) Pour the agarose solution containing AG-CelRed into the gel casting tray. Insert the comb at the appropriate position, and allow the gel to solidify at room temperature.
5) Once the gel has completely solidified, load the samples and perform electrophoresis. After electrophoresis, use a gel imaging system to detect the bands.

Soaking Staining Method (Recommended)

1) Prepare an agarose or polyacrylamide gel without nucleic acid dye and perform electrophoresis as usual.
2) Dilute the AG-CelRed 10,000× stock solution into a 0.1 M NaCl aqueous solution to prepare a 3× staining solution (e.g., mix 15 µl of AG-CelRed 10,000× stock solution, 5 ml of 1 M NaCl, and 45 ml of H_2O).
3) Carefully place the gel into an appropriate container. Slowly add enough 3× staining solution to completely submerge the gel. Stain the gel with gentle shaking at room temperature for 15–30 minutes.
4) The optimal staining time may vary depending on gel thickness and agarose concentration.
5) For gels containing 3.5%–10% polyacrylamide, staining typically takes 30 minutes to 1 hour and may increase with higher polyacrylamide content.

Accurate Biotechnology (Hunan) Co., Ltd
Hunan Inspection Industrial Park, Bachelor Road,
Yuelu District, Changsha City, Hunan Province, China
service@agbio.com.cn
+86 400 767 6022
en.agbio.com.cn
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