

REF 21142



RedStar™ DNA/RNA Loading Dye [6x]

KEY FEATURE

- Used for detecting double-strand DNA and RNA
- Alternatives to EtBr offer more sensitive detection.
- Using DNA loading dyes instead of in-gel staining.
- No hazard waste ; Non-toxic, non-mutagenic and non-carcinogenic
- Suitable for fluorescent-free agarose gel electrophoresis
- Distinct band resolution at 595nm wavelength

GENERAL USE

- Sample : RedStar™ DNA/RNA Loading Dye [6x] = 5 : 1

*For research purpose only.
Not for use in diagnostic procedures for clinical purposes.*

DESCRIPTION

RedStar™ DNA/RNA Loading Dye (6x) is a novel and safe nucleic acid stain, offering a superior alternative to the traditional ethidium bromide (EtBr) stain for detecting nucleic acids in agarose gels. The fluorescent dye binds to DNA or RNA, allowing for clear and bright visualization under UV light. This makes it easier to track the progress of electrophoresis and analyze the results. The loading dye is mixed with the samples before loading onto the gel. This simplifies the process and ensures that the dye is evenly distributed throughout the sample. The loading dye contains tracking dyes that migrate at different rates during electrophoresis. This helps to monitor the progress of the run and ensures that the nucleic acids are migrating as expected.

The dye is supplied in a ready-to-use format, eliminating the need for additional preparation. Simply mix the dye with your sample, load it onto the gel, and proceed with electrophoresis. By using a fluorescent staining reagent-contained DNA/RNA loading dye, researchers can achieve more accurate and efficient visualization of nucleic acids, streamline their workflows, and improve the overall quality of their electrophoresis results.

NOTICE BEFORE USE

- For optimal imaging with a 590nm filter (EtBr filter) : The UV transilluminator in the laboratory should be equipped accordingly.
- Maintain Darkness During Storage: After use, store the reagent in dark conditions to prevent degradation.
- No Other Staining Reagents in Agarose Gel: The agarose gel should not contain other staining reagents.
- Follow Recommended Concentration: Use the reagent at the specified concentration. Lower concentrations can cause DNA migration shifts, and higher concentrations can result in poor band resolution.
- Avoid Contact with Skin and Eyes: Although non-toxic, avoid contact with skin and eyes. Wear gloves when handling the reagent.
- Use Fluorescent Stained DNA Markers: Use DNA markers that contain fluorescent staining reagents since the gel is unstained.
- Clean the surface of the illuminator with deionized water before and after each use. This will prevent the accumulation of fluorescent dyes, which can create a high fluorescent background.

PROTOCOLS

1. Mix RedStar™ DNA/RNA Loading Dye with the DNA sample at a 1:5 volume ratio.

Note : For example, add 1 µl of RedStar™ Dye to 5 µl of the DNA sample.

Note : Mix the RedStar™ Dye and DNA sample thoroughly. It is highly recommended to incubate the mixture for 1-2 minutes to allow proper interaction between the dye and the DNA.

2. Proceed with agarose gel electrophoresis, avoiding exposure to light as much as possible.

3. Visualize or photograph the gel using either UV or blue-light illumination.

Note : It is important to clean the surface of the illuminator with deionized water before and after each use. This will prevent the accumulation of fluorescent dyes, which can create a high fluorescent background.

Note : Note that video cameras and CCD cameras may have different spectral responses compared to black-and-white print film, and therefore may not exhibit the same sensitivity.

Note : Visualize bands using a UV transilluminator or other gel documentation system. Gels can be imaged using an ethidium bromide emission filter.

APPLICATION

- Visualization of DNA and RNA bands as they separate during agarose gel electrophoresis
- Isolation of DNA fragments for subcloning without introducing mutations normally caused by EtBr.

STORAGE

- Store at 2~8°C, protected from light and stable for at least 12 months.

PRODUCT USE LIMITATION

This product is developed, designed and sold exclusively for research purposes and in vitro use only.

ORDERING INFORMATION

Product Name	Cat.No.
RedStar™ DNA/RNA Loading Dye (6x)	21142
RedStar™ 100 bp DNA Ladder	24079
RedStar™ 1kb DNA Ladder	24080

TECHNICAL INFORMATION

❖ Sensitivity - DNA

Sensitivity of DNA detection of RedStar™ DNA/RNA Loading Dye (6x) under UV transmission

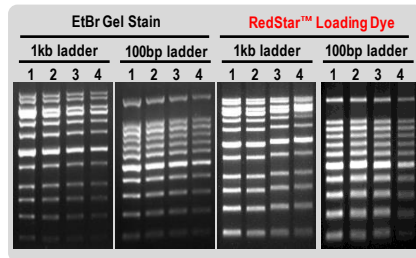


Fig. 1. Gel analysis of serial 100bp ladder compare other products and RedStar™ DNA/RNA Loading Dye (6x).

Lanes 1 to 4 are DNA markers serially diluted ½ folds. Based on lane 1, the amount of DNA in the 5kb and 2kb bands of the 1kb ladder and the 500bp band of the 100bp ladder is 100ng, and the other bands are 40ng.

RedStar™ DNA/RNA Loading Dye (6x) has higher sensitivity compared to EtBr at small molecules and low concentrations.

❖ Sensitivity – RNA Staining

Sensitivity of RNA detection of RedStar™ DNA/RNA Loading Dye (6x) under UV transmission

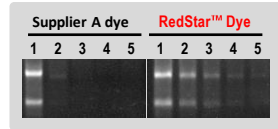


Fig. 1. Gel analysis of serial diluted mouse liver RNA compare supplier A dye and RedStar™ DNA/RNA Loading Dye (6x).

Lane 1, 80 ng/μl RNA; lane 2, 60 ng/μl RNA; lane3, 40 ng/μl RNA; lane 4, 20 ng/μl RNA; lane 5, 10 ng/μl RNA

RedStar™ DNA/RNA Loading Dye (6x) has a sensitivity that is more than 4 times higher than that of other companies.

BRIEF GUIDE

