Safe Red Nucleic Acid Stain, 10,000X

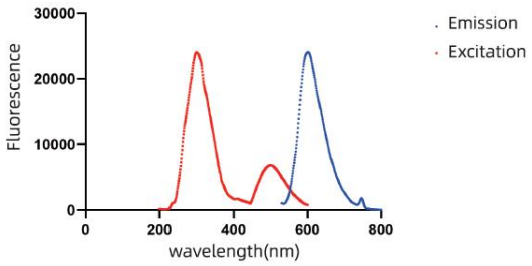
Cat. No. : RM19009

Product components

Components	Component number	500 μL
Safe Red Nucleic Acid Stain	RM19009	1 × 500 μL

Product Description

Safe Red is an ultra-safe, highly sensitive, and highly stable fluorescent nucleic acid stain provided at 10,000X concentration. It is compatible with commonly used electrophoresis buffer solutions such as TAE, TBE, and RRB (rapid electrophoresis buffer) and has greater detection sensitivity than ethidium bromide (EB) in agarose gel electrophoresis. Safe Red has a large molecular weight (~1240 g/mol) and is unable to penetrate cell membranes, rending it non-mutagenic and thus preferred for safety during handling and ease of disposal. Safe Red is suitable for the ultraviolet gel imaging as a perfect replacement for EB, displaying strong excitation at 250 ~ 300 nm.



Excitation and emission spectra of Safe Red

Storage Condition

Store at room temperature.

Protocols

Binding of Safe Red Stain macromolecules to large nucleic acid fragments may affect the migration of DNA bands during electrophoresis. Post-staining of gels is recommended versus using pre-cast gels containing Safe Red.

1. Post-Staining with 3X Safe Red (recommended)

a. Cast stain-free gels and perform electrophoresis according to conventional methods.

b. Prepare a 3X Safe Red Post-Staining Solution in 0.1M NaCl as follows: combine 15 μL Safe Red 10,000X stock solution, 5 mL of 1M NaCl , and 45 mL H_2O.

Note: 3X Safe Red staining solution can be prepared in large quantities and stored at room temperature.

c. Immerse the gel in 3X Safe Red staining solution and stain for 10-20 min with rocking at room temperature. Optimal staining time may vary according to agarose concentration and the thickness of the gel.

2. Pre-Cast Agarose Gels Containing 1X Safe Red

a. Add 5 μL Safe Red 10,000X Stock Solution per 50 mL agarose gel and mix thoroughly. Safe Red has excellent thermostability and can be added either to agarose powder and electrophoresis buffer prior to heating and melting, or afterwards to molten agarose solution. Cast gel as usual.

b. Safe Red is highly sensitive; for clear results, decrease loaded sample volume by 1/2 to 1/3 of that typically loaded into wells with Ethidium Bromide staining.

c. Perform electrophoresis according to conventional methods and then proceed to blue light visualization (recommended) or UV imaging with a SYBR Green filter.

Notes

1. Store the stain at room temperature as recommended, Low temperatures may induce precipitation. If precipitation occurs before use, heat at 45-50℃ for 2 min and mix thoroughly by vortexing.
2. 3X Safe Red staining solution can be reused for up to 3 times.
3. If using pre-cast gels containing Safe Red, sample resolution can be optimized by decreasing voltage and prolonging electrophoresis run-time appropriately. Reduce the amount if sample loaded per well to between 2 ~ 15 ng to avoid bands diffusing or forming a "smiley face" shape during the run. Additionally, reducing agarose concentration in the gel can improve the resolution of large fragments.