7040 Virginia Manor Road
Beltsville, MD 20705, USA
Web: www.abpbio.com;
Email: info@abpbio.com

Product Information

SYBR Green II RNA Gel Stain, 10,000X in DMSO

Catalog Number	Packaging Size
N105	500 µL

Storage upon receipt:
- -20°C
- Protect from light

Ex/Em: 497/520 nm, bound to RNA

Product Description

SYBR Green II is one of the most sensitive stains known for detecting RNA in agarose and polyacrylamide gels. This stain can detect as little as 100 pg of RNA. **SYBR Green II** is compatible with a standard 300 nm transilluminator, a 254 nm epi-illuminator, a blue-light transilluminator, or a gel reader equipped with visible light excitation such as a 488 nm laser-based gel scanner.

On denaturing agarose/formaldehyde gels or poly-acrylamide/urea gels, about 1 ng RNA per band can be detected using 254 nm epi-illumination without any washing or destaining steps. The fluorescence of RNA/SYBR Green II complexes is not quenched in the presence of urea or formaldehyde, eliminating the need to wash these denaturants out of gels prior to staining. In addition, staining agarose/formaldehyde gels with SYBR Green II RNA gel stain does not interfere with transfer of RNA to filters or subsequent hybridization in Northern blot analysis as long as 0.1%-0.3% SDS is included in prehybridization and hybridization buffers.

SYBR Green II RNA Gel Stain, 10,000X is a concentrated **SYBR Green II** solution that can be diluted 10,000 times for use in precast gel staining or 5,000 times for use in post gel staining according to the procedures described below. One vial of 10,000X solution can be used to prepare at least 100 precast minigels or post-stain at least 100 minigels.

Gel staining with **SYBR Green II** is compatible with downstream applications such as gel extraction and cloning. **SYBR Green II** is efficiently removed from RNA by ethanol precipitation.

Staining Protocols

1. Post-staining Protocol

1.1 Perform electrophoresis on nondenaturing gels or on denaturing polyacrylamide/urea or agarose/formaldehyde gels according to standard techniques.

1.2 Dilute the stock **SYBR Green II RNA Gel Stain.** For non-denaturing gels and denaturing polyacryl-amide/urea gels, we recommend a 1:10,000 dilution in TBE. For denaturing agarose/formaldehyde gels, we recommend a 1:5000 dilution in TBE. Staining with SYBR Green II reagent is pH sensitive. For optimal sensitivity, verify that the pH of the staining solution is between 7.5 and 8.0.

1.3 Carefully place the gel in a suitable polypropylene container. Gently add enough staining solution to submerge the gel.

1.4 Agitate the gel gently at room temperature for 30 min.

1.5 Wash the gel with DI water to remove excess dye. Image the stained gel with a transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR Filter or GelStar filter.

2. Pre-cast Protocol

Note: SYBR Green II is highly sensitive RNA stain. If the loading amount of RNA is over 100 ng, it will affect significantly band shift. In that case, reduce RNA loading amount is highly recommended.

2.1 Prepare molten agarose gel solution using your standard protocol.

2.2 Dilute the **SYBR Green II** 10,000X stock reagent into the molten agarose gel solution at 1:10,000 and mix thoroughly.

2.3 Cast the gel and allow it to solidify.

2.4 Load samples and run the gels using your standard protocol.

2.5 Image the stained gel with a transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR Filter or GelStar filter.

Note: The pre-cast protocol is not recommended for polyacrylamide gels. Use the post staining protocol for acrylamide gels.

Related Products

Cat. No	Product Name	Unit Size
N100	GreenView™ DNA Gel Stain, 10,000X in H_2O	500 µL
N101	GreenView™ Plus DNA Gel Stain, 10,000X in DMSO	500 µL
N102	RedView™ DNA Gel Stain, 10,000X in DMSO	500 µL
N103	GreenView™ Ultra DNA Gel Stain, 10,000X in DMSO	500 µL
N104	SYBR Green I DNA Gel Stain, 10,000X in DMSO	500 µL
N105	SYBR Green II RNA Gel Stain, 10,000X in DMSO	500 µL
N106	SYBR Gold DNA Gel Stain, 10,000X in DMSO	500 µL

Troubleshooting

Problem	Suggestion
Smeared RNA bands in precast gel	1. Reduce the amount of RNA loading. Smeared bands can be caused by overloading. 2. Perform post-staining instead of pre-casting. 3. Prepare a lower percentage agarose gel for better resolution of large fragments. 4. Change the running buffer. TBE buffer has a higher buffering capacity than TAE.
Discrepant RNA migration in precast gel	1. Reduce the amount of RNA loading. 2. Reduce the amount of dye used, i.e. use 0.5X in precast gels. 3. Perform post-staining instead of pre-casting.
Weak fluorescence signal	1. The dye may be precipitated out of solution. Vortex to redissolve. 2. Increase the amount of dye used, i.e. use 2X in precast gels.

Frequently Asked Questions

Question	Answer
Can SYBR Green II be used to stain dsDNA or ssDNA?	Yes.
Can I reuse a SYBR Green II precast gel after electrophoresis?	We do not recommend reusing SYBR Green II precast gels as signal decreases with subsequent electrophoresis.
What is the lower detection limit of SYBR Green II?	Some users have reported being able to detect less than 100 pg RNA. However, the limit of detection will depend on instrument capability and exposure settings.
Does SYBR Green II need to be used in the dark?	You can use the dye in room light, however we recommend storing the dye in the dark.