Cyber Orange™ Nucleic Acid Gel Stain *10,000X DMSO Solution*

Ordering Information	*Storage Conditions*
Product Number: 17595 (1 mL)	Keep in freezer and protect from light

Introduction

Cyber Orange™ is an excellent nucleic acid gel stain, and exhibits large fluorescence enhancement upon binding to nucleic acids. It has the same spectral properties to those of SYBR® Gold, thus a great replacement to SYBR® Gold (SYBR® Gold is the trademark of Invitrogen). It is one of the most sensitive stains available for detecting DNA in agarose and polyacrylamide gels. Cyber Orange has higher sensitivity for DNA than RNA, and is ideal for use with laser scanners with the same instrument settings of SYBR Gold. As with Cyber Green™ stain, this remarkable sensitivity can be attributed to a combination of unique dye characteristics. Because the nucleic acid–bound Cyber Orange™ dye exhibits excitation maxima at both ~495 nm and ~300 nm (the emission maximum is ~537 nm), it is compatible with a wide variety of instrumentation, ranging from UV epi- and transilluminators and blue-light transilluminators, to mercury-arc lamp– and argon-ion laser–based gel scanners. Cyber Orange is much more sensitive than ethidium bromide for DNA in agarose gels, and it can detect as low as picogram dsDNA on gels.

Spectral Properties

Ex/Em = 495/540 nm when bound to DNA

Handling and Disposal

Cyber orange™ nucleic acid gel stain is significantly less mutagenic than ethidium bromide. However, we must caution that no data are available on the mutagenicity or toxicity of Cyber orange™ stain in humans. It should be treated as a potential mutagen and used with appropriate care due to the fact that this reagent binds to nucleic acids. The disposing of the stain shall be in compliance with local regulations.

Staining Protocols

We have found the greatest sensitivity is achieved by post-staining which also eliminates the possibility of dye interference with DNA migration. While the precast protocol is more convenient, some DNA samples may experience migration, it is highly recommend the gel running time does not exceed more than 2 hours. The following protocols are recommended. However some comparisons might be needed to determine which one better meets your needs

1. Post-staining Protocol

1.1 Run gels based on your standard protocol.

1.2 Make 1X Cyber Orange™ working solution by diluting the 10,000X stock reagent into PH 7.5 - 8 buffer (e.g., TAE, TBE or TE preferably pH 8.0).
Note: Staining solutions prepared in water are less stable than those prepared in buffer and must be used within 24 hours to ensure maximal staining sensitivity. In addition, staining solutions prepared in buffers with pH below about 7.5 or above 8.0 are less stable and show reduced staining efficacy.

1.3 Place the gel in a suitable polypropylene container. Gently add a sufficient amount of the 1X staining solution to submerge the gel.
Note: Do not use a glass container, as it will adsorb much of the dye in the staining solution.

1.4 Agitate the gel gently at room temperature for ~30 minutes, protecting from the light.
Note: The staining solution may be stored in the dark (preferably refrigerated) for a week and reused up to 2-3 times.

1.5 Image the gel with a 300 nm ultraviolet or 254 nm transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter or GelStar® filter.

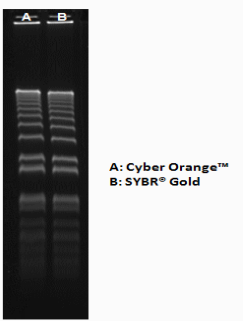
2. Pre-casting protocol

2.1 Prepare agarose gel solution using your standard protocol.

2.2 Dilute the 10,000X Cyber Orange™ stock reagent into the gel solution at 1:10,000 just prior to pouring the gel and mix thoroughly.

2.3 Run gels based on your standard protocol.

2.4 Image the gel with a 300 nm ultraviolet or 254 nm transilluminator, or a laser-based gel scanner using a long path green filter such as a SYBR® filter or GelStar® filter.



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