

CodexGreen DNA Gel Stain (10,000 X in Water)

(Cat #: D002)

Introduction:

CodexGreen DNA Gel Stain is a highly sensitive fluorescent stain for detecting nucleic acids in agarose and polyacrylamide gels. This non-toxic stain gives high sensitivity detection of dsDNA or ssDNA and RNA. Gels can be post-stained, alternatively, the stain can be added to agarose gels during gel casting. CodexGreen DNA Gel Stain is compatible with a standard 300 nm transilluminator, a 254 nm transilluminator, a blue-light transilluminator, or a gel reader equipped with visible light excitation such as a 488 nm laserbased gel scanner. It is a 10,000 X concentrated 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.

Applications:

Gel staining with CodexGreen is compatible with downstream applications such as gel extraction and cloning. It is efficiently removed from DNA by phenol/chloroform extraction and ethanol precipitation.

Table 1: Product Package & Storage

| Cat # | Product Name | Volume | Storage |
|-------|---|-------------|-----------------------------------|
| D002 | CodexGreen DNA Gel Stain (10,000 X in Water) | 500 μ L | 2 ~ 25 °C, protect from light. |

Specification:

Excitation/Emission (nm): 500/530 nm, bound to nucleic acid

Concentration: 10,000 X in water

Storage: Store at 2 ~ 25 °C, protect from light.

1. Post-staining Protocol

- 1.1 Run gels as usual according to your standard protocol.
- 1.2 Dilute the CodexGreen 10,000X stock reagent 5,000-fold to make a 2X staining solution in TE, TBE or TAE buffer.
- 1.3 Carefully place the gel in a suitable polypropylene container. Gently add a sufficient amount of the 2X staining solution to submerge the gel.
- 1.4 Agitate the gel gently at room temperature for 30 min.
- 1.5 Wash the gel with deionized 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

- 2.1 Prepare molten agarose gel solution using your standard protocol.
- 2.2 Dilute the CodexGreen 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.*

Troubleshooting

| Problem | Suggestion |
|---|--|
| Smeared DNA bands in precast gel | (1) Reduce the amount of DNA 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 nucleic acid fragments; (4) Change the running buffer. TBE buffer has a higher buffering capacity than TAE. |
| Discrepant DNA migration in precast gel | (1) Reduce the amount of DNA 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. |