EZ-Vision® In-Gel

Code	Description	Size
N391-0.5ML	**EZ-Vision® In-Gel Solution, 10,000X**	100 mini-gels
N391-5MLDRP	**EZ-Vision® In-Gel, Dropper Bottle**	100 mini-gels
N391-15MLDRP	**EZ-Vision® In-Gel, Dropper Bottle**	300 mini-gels
N391-SAMPLE	**EZ-Vision® In-Gel Solution, 10,000X**	10 mini-gels

General Information

EZ-Vision® In-Gel Solution, 10,000X is a non-mutagenic and non-toxic fluorescent DNA dye that is used as an in-gel (precast) stain to visualize DNA in agarose gels. EZ-Vision® In-Gel Solution is an excellent replacement for hazardous ethidium bromide used for DNA applications. It helps reduce harmful chemical exposure and eliminates hazardous waste disposal costs. As an in-gel preparation for electrophoresis, EZ-Vision® In-Gel Solution is simply added to the molten agarose prior to gel casting. After electrophoresis DNA bands can be instantly visualized with sensitivity similar to ethidium bromide staining. Alternatively, the dye may be used for post-staining of gels. EZ-Vision® In-Gel Solution is compatible with all standard UV transilluminators with a SYBR® Green (500 - 600 nm) filter recommended for documentation. EZ-Vision® In-Gel Solution is also available in two convenient dropper bottle sizes to minimize pipetting.

- Non-toxic, non-mutagenic fluorescent DNA dye
- Reduces ethidium bromide use and hazardous waste costs
- Immediate DNA visualization post-electrophoresis

Storage/Stability

Store cold (2 – 8°C). Stable for at least 1 year.

Product Use Limitations

For research use only. Not for therapeutic or diagnostic use.

Protocol/Procedure

Note: When EZ-Vision® In-Gel is used as a pre-cast solution, the dye will run in the opposite direction of the DNA migration during electrophoresis. Therefore, the very bottom of the gel may experience a lower concentration of dye.

In-Gel staining

1. Dilute the EZ-Vision® In-Gel Solution 10,000X into the pre-melted agarose solution at a concentration of 1:10,000. For example, add 5 µL of the EZ-Vision® In-Gel Solution 10,000X to 50 mL of agarose gel solution. The EZ-Vision® In-Gel Solution can be added while the solution is still hot. If using the EZ-Vision® In-Gel, Dropper Bottle, add 1 – 2 drops of solution per 50 mL gel.
2. Cast the gel and allow it to solidify.
3. Load sample and run according to standard procedure.
4. After the run, remove gel and place on a UV transilluminator to immediately visualize bands. DNA bands will emit a whitish-blue fluorescence against a dark background using a standard transilluminator (254 or 302 nm). The optimal visualization filter is an SYBR® Green filter (500 – 600 nm); however, an ethidium bromide filter can be used.

Post-electrophoresis staining

1. Run gels according to standard procedure.
2. Dilute the EZ-Vision® In-Gel Solution 10,000X into 100 mM NaCl to make a 2.5X staining solution. For example, add 25 µL to 100 mL of 100 mM NaCl (100 mM NaCl solution can be prepared by adding 10 mL of a 1 M NaCl solution to 90 mL of H2O). If using the EZ-Vision® In-Gel, Dropper Bottle, add 1 - 2 drops of solution per 100 mL of 100 mM NaCl.
3. Place the gel in a suitable staining container and add enough 2.5X staining solution to completely submerge the gel.
4. Stain while agitating the gel at room temperature for 20 – 30 minutes. The optimal staining time may vary based on the gel thickness and concentration. The staining solution can be reused at least twice.
5. Destain the gel with two 10 minute exchanges of water while agitating the gel to remove additional background signal.
6. After destaining, remove gel and place on a UV transilluminator to immediately visualize bands. DNA bands will emit a whitish-blue fluorescence against a dark background using a standard transilluminator (254 or 302 nm). The optimal visualization filter is an SYBR® Green filter (500 – 600 nm); however, an ethidium bromide filter can be used.

Frequently Asked Questions

Will EZ-Vision® In-Gel Solution work if it is added to hot agarose?

- Adding EZ-Vision® In-Gel to hot agarose does not reduce performance.

Is the dye solution in the EZ-Vision® In-Gel, Dropper Bottles identical to EZ-Vision® In-Gel Solution, 10,000X?

- The EZ-Vision® In-Gel, Dropper Bottles contain a more dilute solution of dye than EZ-Vision® In-Gel Solution, 10,000X. The lower dye concentration (and greater product volume) accounts for the volume of the drops dispensed by the dropper bottles being greater than the volume dispensed using a pipette.

Which filter is recommended for visualizing DNA stained with EZ-Vision® In-Gel Solution?

- A SYBR® Green filter (500 – 600 nm) is optimal, although an ethidium bromide filter (550 – 640 nm) may also be used.

Which downstream applications are compatible with EZ-Vision® In-Gel stained DNA?

- EZ-Vision® In-Gel stained DNA may be used in restriction digestion, PCR, ligation and sequencing*. (* *In some cases, run lengths may be shorter with EZ-Vision® stained DNA compared to ethidium bromide stained DNA.)*

How sensitive is EZ-Vision® In-Gel staining?

- EZ-Vision® In-Gel Solution can detect 6 ng DNA above 500 bp and 12 ng DNA at 50 bp.

Is migration of DNA affected when stained with EZ-Vision® In-Gel Solution?

- No, EZ-Vision® In-Gel stained DNA migrates at the same rate as unstained DNA.

What is the duration of fluorescence emission upon UV exposure?

- EZ-Vision® In-Gel Solution, 10,000X and EZ-Vision® In-Gel, Dropper Bottle are stable for at least a year at 2 – 8°C when stored protected from light.

Does loading buffer need to be added to DNA samples for gels stained with EZ-Vision® In-Gel Solution?

- Yes, loading buffer is necessary. There is no need, however, to add ethidium bromide or any other DNA dye.

Why can't I see my DNA?

1. The wrong filter was used for detection.
    a. A SYBR® Green filter (500 – 600 nm) is recommended. If using an ethidium bromide filter (550 – 640 nm), longer exposures may be necessary.
2. A Dark Reader was used to visualize DNA.
    a. EZ-Vision® In-Gel Solution is incompatible with visualization by a Dark Reader. Use standard UV transillumination.
3. Insufficient DNA was loaded on the gel.
    a. Load at least 100 ng DNA per lane. You may need to optimize loading amounts for each sample. EZ-Vision® In-Gel is slightly less sensitive than ethidium bromide for small DNA fragments (≤ 100 bp).
4. Gel running conditions were not optimized.
    a. The DNA dye in EZ-Vision® In-Gel Solution may dissociate from DNA samples with long run times. Gel running at 8 V/cm for 20 minutes is recommended.

For Technical Support

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