

eStain™ Protein Staining System - Frequently Asked Questions

1. Why should I use eStain™ Protein Staining System?

The eStain™ Protein Staining System is a revolutionary electric staining system designed to quickly, easily and reliably perform protein gel staining with Coomassie blue dye within as few as 7 minutes. This system can greatly shorten your workflow and save your valuable research time for following analysis.

2. What's the difference between eStain™ Protein Staining System and other Coomassie blue staining method?

Most of current Coomassie blue staining methods require three steps including fixing (or washing), staining and de-staining (or washing), etc., which is a long and tedious process. The eStain™ Protein Staining System applies GenScript's proprietary electric staining technology. A high electric force generated between graphite anode and titanium cathode drives the negatively charged Coomassie blue dye into the gel matrix to stain the proteins and the unbound Coomassie blue dye out of the gel matrix to destain the gel. The eStain™ System integrates three steps of other Coomassie blue staining methods into single one step and significantly reduces the time required for protein staining analysis.

3. What are the functions of eStain™ Protein Staining Pads and Gel Window?

The eStain™ Protein Staining Pads are the consumable part of eStain™ System. Each pack of eStain™ Protein Staining Pad contains an eStain™ Cathode Pad presoaked with proprietary cathode buffer containing CBB dye R-250 or G-250, and an eStain™ Anode Pad presoaked with proprietary anode buffer. Similar to semi-dry blotting, the eStain™ Cathode Pad and eStain™ Anode Pad act as ion reservoirs. Simultaneously the eStain™ Cathode Pad also supplies negatively charged CBB dye for protein staining. Gel Window is made from polycarbonate and used as the spacer between anode pad and cathode pad to prevent short circuit.

4. Can the eStain™ Protein Staining Pads be re-used for staining multiple gels?

No. For best results, one pack of eStain™ Protein Staining Pad is used to stain one gel. Discard used eStain™ Pad after each staining.

5. Can the eStain™ Protein Staining Pads be used on blotting device to stain protein gels?

No. The eStain™ Protein Staining Pads are designed to work with eStain™ Protein Staining Device. If they are used on blotting device, we can't guarantee users get satisfactory staining results.

6. Why should I replace the graphite electrode?

During electric staining process, the eStain™ Graphite Electrode will absorb ions from anode pad and as well as lose carbon composition, which will change the conductivity of the graphite electrode, thereby affecting the staining results. For the best staining results, after having been used for 200 times of electric staining, the worn graphite electrode should be replaced by a new one.

7. Which types of protein gels eStain™ Protein Staining System can be compatible with?

The eStain™ Protein Staining System is designed to work with multiple homemade or commercially available mini polycrylamide gels, including Tris-Glycine, Bis-Tris, Tris-Acetate and Tris-Tricine gels, etc. For some special gels, optimization of the staining time is needed for best results.

8. How many gels can be stained at same time?

Using eStain™ Protein Staining System, one piece of gel can be stained for each staining.

9. What is the sensitivity of the eStain™ Protein Staining System?

The eStain™ System utilizes Coomassie blue dye R-250 and G-250 as staining reagents. They have similar detection sensitivity down to a few ng per protein band.

10. Can I stain very thin (less than 1 mm) or very thick (more than 1 mm) gels using eStain™ System?

Yes. However, the staining time needs to be optimized. For example, 6 minutes are needed to stain a 0.75 mm mini gel and 9 minutes are needed to stain a 1.5 mm mini gel.

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- 11. According to the eStain™ mechanism, the Coomassie blue dye is driven by electric force. Will the protein molecules also be moved by the electric force as well as the dye reagents?**

Not significantly, the protein molecules will Not be driven out of gels by the electric force. Firstly, the eStain™ Protein Staining Pads have been presoaked with proprietary buffers which have protein immobilization function; secondly, the working voltage of eStain™ Device is optimized to be just high enough to stain the proteins but not to drive the significant movement of protein molecules. That is why the same gel can be stained again.

- 12. Is eStain™ System compatible with mass spectrometry and 2D electrophoresis?**

Yes. It is compatible with mass spectrometry and 2D electrophoresis just like conventional Coomassie blue staining methods.

- 13. Can a Western blot be performed on a gel that has been stained with eStain™ System?**

Yes, the gels stained with eStain™ System can be de-stained and the proteins can be transferred just in the same way as the gels stained by the conventional Coomassie blue staining methods.

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