Neodye DNA Red

Version 22.1

Cat# NB-54-0030

Product Description

Neodye DNA Red is a novel nucleic acid dye that can replace ethidium bromide (EB). It has many advantages such as high sensitivity and strong thermal stability. It has higher detection sensitivity for trace DNA, especially trace small molecule DNA. Under the ultraviolet light, DNA exhibits red fluorescence. Neodye DNA Red is applicable for dsDNA, ssDNA and RNA staining in agarose gels and polyacrylamide gelselectrophoresis.

Components

Components	NB-54-0030-01	NB-54-0030-02	NB-54-0030-03
Neodye DNA Red	0.5 ml	10 × 0.5 ml	100 × 0.5 ml

Storage

Store at 15 ~ 25℃ and protect from light, transport at room temperature.

Applications

It is applicable for agarose gel electrophoresis of in-gel staining methods (pre-stained gels) and gel soaking methods (post-stained gels), and polyacrylamide gel electrophoresis of gel soaking methods. It is applicable for dsDNA, ssDNA and RNA staining.

Key Advantages

Non-toxic: Macromolecular properties of Neodye DNA Red prevent penetrating cell membranes into the cells.

High sensitivity: Suitable for electrophoresis staining of various sizes and highly sensitive for low concentrations and trace DNA.

High stability: Suitable for the Agarose gel prepared by microwave or other heating methods.

High SNR: Strong fluorescence signal of the sample with low background signal.

Simple operation: This product has the same stability as EB, and does not degrade during precast gel and electrophoresis; the staining process only takes 30 min, and the stained gel can be directly observed or imaged without destaining or washing.

Notes

For research use only. Not for use in diagnostic procedures.

1. The Neodye DNA Red is highly sensitive. Please reduce the amount of loaded sample for electrophoresis and the recommended amount is 50 - 200 ng per lane.
2. When using the in-gel staining method (gel length 5 cm), and this product is used together with Neo Biotech #MD101/MD102/MD103/MD104,if 150 - 180 V, it is recommended that the indicator band runs to 2/3 or the bottom of the gel; if 100 - 120 V, it is recommended that the indicator band runs to the bottom of the gel.
3. It is recommended to use the gel soaking method for staining to avoid the influence of dyes on nucleic acid migration.
4. If the separation of the bands is not obvious, it is recommended to use the gel soaking method to confirm whether the migration of nucleic acid is caused by the influence of the dye. If the problem is not resolved after soaking, it is recommended to re-prepare the sample and repeat the experiment.
5. Store the staining solution at room temperature and protect from light to avoid low temperature precipitation.

Experiment Process

A. For Agarose Gels

1. Gel soaking method (Post-stained gels, recommendation)

   a. Prepare agarose corresponding to the gel concentration (e.g. 1%, 1 g agarose added to 100 ml 1 × TAE).

   b. Heat in a microwave oven till the agarose melts completely.

   c. Pour the agarose solution into the mold and insert the comb teeth in suitable place. Normally it takes 30 - 60 min at room temperature.

   d. Load samples with a final concentration of 1 × loading buffer and run the gel.

   e. Dilute the Neodye DNA Red 10,000 × stock with 0.1 M NaCl to make a 3 × Neodye DNA Red staining solution. (e.g. add 15 µl of Neodye DNA Red 10,000 × to 50 ml of 0.1 M NaCl). The staining solution can be used for 3 times and stored at 4℃ for one week (protect from light).

   f. Place the gel in a suitable container carefully. Smoothly add sufficient amount of the 3 × Neodye DNA Red staining solution to submergethe gel. Agitate the gel gently at room temperature for 15 - 30 min.

   g. The staining time depends on the concentration of agarose and the thickness of gel.

2. In-gel staining method (Pre-stained gels. The same method as EB. It is recommended to use when the amount of DNA is less than 400 ng)

   a. Prepare agarose corresponding to the gel concentration.

   b. Heat in a microwave oven till the agarose melts completely.

   c. Dilute the Neodye DNA Red 10,000 × stock into the hot agarose gel solution at 1:10,000 and mix thoroughly.

   d. Cast the gel and allow it to solidify. Normally it takes 30 - 60 min at room temperature.

   e. Load samples and run the gel.

B. For Polyacrylamid Gels

Gel soaking method (Post-stained gels)

   a. Prepare agarose corresponding to the gel concentration

   b. Load samples and run the gels.

   c. Dilute the Neodye DNA Red with 0.1 M NaCl to make a 3 × Neodye DNA Red staining solution. (e.g. The dye can be reused for 3 times and bestored at 4℃ for one week).

   d. Place the gel in a suitable container carefully. Smoothly add a sufficient amount of the 3 × Neodye DNA Red staining solution to submergethe gel. Agitate the gel gently at room temperature for 15 - 30 min.

   e. The staining time depends on the concentration of agarose and the gel thickness.

Fig 1. and Fig 2. are Neodye DNA Red dye nucleic acid electrophoresis and cell membrane permeability assay (cytotoxicity assay), respectively.

Fig 1. The results of Neodye DNA Red and standard GelRednucleic acid gel staining

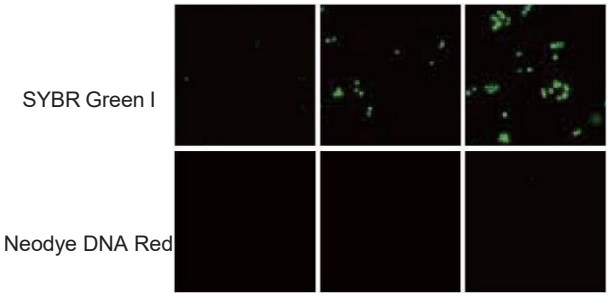

Fig 2. The results of SYBR Green I (1 ×) and Utral GelRed (1 ×) stain on 293T cells at 37℃

The results show that Neodye DNA Red has higher sensitivity under the same experimental conditions. SYBR Green I can penetrate cell membranes quickly and stain DNA in living cells, but Neodye DNA Red cannot penetrate cell membranes to stain the nucleus. Therefore, Neodye DNA Red is non-cytotoxic, safe and reliable.