HyperLight™ PicoGreen dsDNA Assay Kit

Product description

Picogreen is an extremely sensitive fluorescent nucleic acid dye. It only emits fluorescence after binding to the double strands of DNA, and the fluorescence produced is directly proportional to the DNA concentration. Due to the simplicity and convenience of the detection method, it has become the current standard for the detection of residual DNA in biological products.

The HyperLight™ PicoGreen dsDNA Assay Kit designed based on PicoGreen dye is a product used for fluorescence detection and quantification of double-stranded DNA. This product is highly sensitive and can resist high concentrations of salt, urea, detergents, proteins, etc. Samples can be read at high throughput with a microplate reader. In contrast, the conventional method for detecting DNA content is to measure its absorbance value at 260 nm (A_{260}). The main drawback is that nucleotides, single-stranded nucleic acids and proteins have a significant impact on the signal, and it is also interfered by contaminants during the nucleic acid preparation process, making it impossible to distinguish between DNA and RNA. This PicoGreen dsDNA Assay Kit can be used for the construction of cDNA libraries, the purification of subcloned DNA fragments, DNA quantification, product amplification, and further detection of primers, etc.

Composition and storage conditions

Components \ Size	100 rxns	500 rxns	Storage
200× dsDNA HS Reagent (Picogreen) (A)	250 µL	1.25 mL	4°C, protect from light
dsDNA HS Buffer (B)	50 mL	250 mL	4°C
dsDNA HS Standard (C)	1 mL	5 mL	4°C
Shipping: Blue Ice	**Shelf life:** 12 months		

Experimental operation

1. Experiment preparation

Before use, restore each component in the kit to room temperature.

2. Preparation of the dye working solution

According to the experimental requirements, use dsDNA HS Buffer to dilute an appropriate amount of 200× dsDNA HS Reagent (Picogreen) to 1× in proportion. Prepare the working solution as needed and ensure it is protected from light.

3. Preparation of the standard working solutions

1）Take an appropriate amount of the dsDNA HS Standard (with a concentration of 10 μg/mL), and perform gradient dilution to 2 μg/mL using dsDNA HS Buffer. Then continue to dilute according to the following table for making the standard curve.

dsDNA HS Buffer (μL)	2 μg/mL dsDNA HS standard stock solution (μL)	Dye working solution (μL)	Final concentration of DNA standard
0	1000	1000	1 μg/mL
900	100	1000	100 ng/mL
990	10	1000	10 ng/mL
999	1	1000	1 ng/mL
1000	0	1000	Blank

2）Mix the components added in the above table well and incubate at room temperature in the dark for 5 minutes.

3）The fluorescence intensity (Ex=480 nm, Em=520 nm) is detected using a microplate reader or fluorometer. Add the solution to the cuvette or take 200 μL to the microplate. Be careful to prevent bubbles. The fluorescence values of the standards are determined using dsDNA HS Buffer as the blank control. The standard curve is prepared by linear regression of the fluorescence intensity corresponding to the concentration (ng/mL) of the standard solution.

4. Detection

Similarly, mix the sample to be tested with the dye working solution in equal volumes, and then measure and determine the DNA concentration in the sample according to the generated standard curve.

Notes

1. Fluorescent dyes have the problem of quenching. Please try to avoid light as much as possible to slow down the fluorescence quenching.
2. The test reagents should be prepared and used immediately. After the DNA is mixed with the dye working solution, the measurement should be carried out as soon as possible.

3. For DNA standards, invert them up and down several times before each use and then centrifuge for a few seconds instantaneously (do not vortex and shake).
4. This product is for research use only!

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