Bright-Lite Luciferase Assay System

DD1204

Version 20.1

Overview to Product

Bright-Lite Luciferase Assay system is the firefly luciferase reporter gene detection kit with ultrahigh sensitivity, stability and homogeneity. This kit contains high purity Luciferin and optimized reaction reagent, resulting in a more stable response, greater environmental tolerance, and less peculiar smell. The cells are lysed and luciferase is released after directly adding the mixed Bright-Lite detection reagent into the cell culture, the reaction shown in Figure 1 can be generated to emit a stable optical signal.

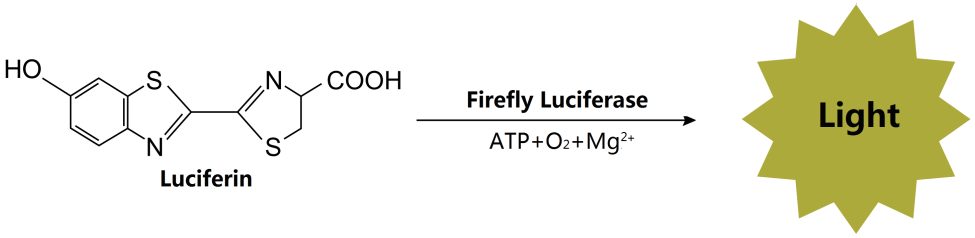

Figure 1. Schematic diagram of Bright-Lite detection principle

As shown in Figure 2, this kit contains two components including solution and substrate, add the mixed Bright-Lite detection reagent into the cell culture with equal volume, and the detection could be performed after 2 min. This kit can generate high signal intensity with normally 30 min of half-life. And it is not affected by enzyme concentration, and is more suitable for detection tests that require sensitivity.

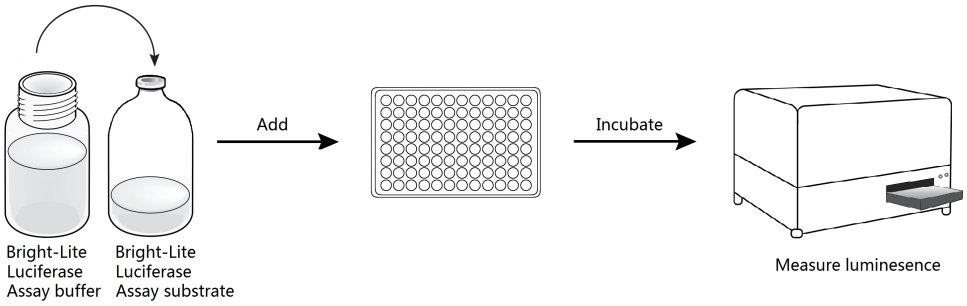

Figure 2. Operation flow diagram of Bright-Lite

Product components

Components	DD1204-01	DD1204-02	DD1204-03	DD1204-04
Bright-Lite Luciferase Assay Buffer	10 ml	10 × 10 ml	100 ml	10 × 10 ml
Bright-Lite Luciferase Assay Substrate (lyophilized)	1 vial	10 vials	1 vial	10 vials

Storage condition

Long-stem storage: -30 ~ -15℃; Transport conditions: ≤0℃.

Before mixing: Bright-lite Luciferase Assay Buffer could be preserved at room temperature (<25℃) or 2 - 8℃ for a long time.

Bright-lite Luciferase Assay Substrate could be conserved for 30 days at 2 - 8℃.

After mixing: Bright-Lite detection reagent can be preserved at room temperature for 1 day (>80% activity) or at 2 - 8℃ for 1 day (>90% activity).

After 10 cycles of repeated freezing and thawing, it can remain stable. The unused reagents can be preserved at - 20℃ for 14 days (>90% activity). It is recommended to preserve at -70℃ under conditions of long-term non-use.

Experiment preparation

Self-provided material

Single/multi-channel pipettor; White/black cell culture plate; A microplate reader with a luminescence detection module.

Operation process

Reagent preparation

1. **Melt:** Put Bright-Lite Luciferase Assay Buffer at 2 - 8℃ or room temperature for melting. The product can also be placed in a 22℃ water bath for melting,**but it should be noted that the water temperature should not exceed 25°C.**
2. **Preparation of Bright-Lite detection reagent:** Add whole bottle of melted Bright-Lite Luciferase Assay Buffer into Bright-Lite Luciferase Assay Substrate, gently turn upside down and mix it for 3 to 5 times to dissolve substrate thoroughly.

▲ Before use, ensure that the Bright-Lite detection reagent has been balanced to room temperature, if Bright-Lite detection reagent is preserved at - 20℃ or - 70℃, after melting, it should be gently turned upside down and mixed for 3-5 times before using.

Detection steps

1. Take out the cell culture plate to be measured from the incubator and place it at room temperature for 30 min to keep the temperature of the plate balanced to room temperature.
2. Add Bright-Litetm detection reagent which is equal to the volume of the cell culture to be tested and balanced to room temperature. For example, when using a 96-well culture plate, add 100 μl of Bright-Lite detection reagent into 100 μl of the cell culture to be tested.
3. Place it at room temperature for at least 2 min to make the cells are fully lysed, then the detection can be performed.

Precautions

Temperature: The intensity of luminescence and rate of decay depends on the reaction rate of luciferase. Temperature has a direct effect on the enzyme reaction rate, so the Bright-Lite detection reagent and cell culture should be balanced to room temperature before adding samples, to ensure the consistency of test results. Pay special attention to batch operations, stacked perforated plate require more time to balance to room temperature than monolayer placed perforated plates, uneven temperature of perforated plate may occur due to inadequate balance to cause a gradient effect between the center and edge of the perforated plate.

Microplate reader: Bright-Lite Luciferase Assay system is compatible with the microplate reader with luminescence detection module. Due to the different settings and sensitivity of different microplate readers, the measured optical signal values may also be different, the detection window may be influenced by it.

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