One-Lite Luciferase Assay System

DD1203

Version 25.1

Product Description

One-Lite Luciferase Assay System is the firefly luciferase assay system with ultra-high sensitivity, stability and homogeneous. This reagent contains high purity luciferin and optimized reaction buffer, resulting in higher accuracy and stability and less peculiar smell. The luciferase signal can be directly detected only by adding this reagent to the cells and without removing medium. The reaction principle shown below (Figure 1).

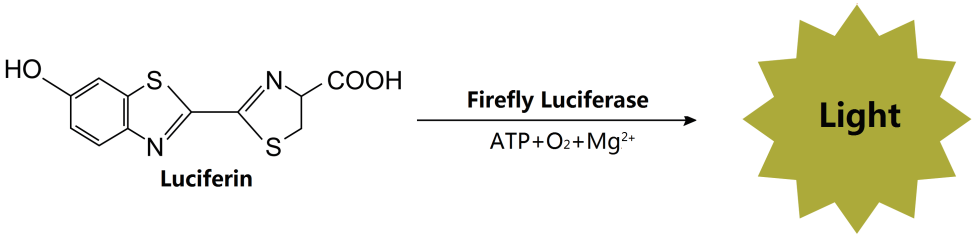

Figure 1. Bioluminescent reactions catalyzed by firefly luciferase

As shown in Figure 2, this reagent contains two components including buffer and substrate. Then, just add this reagent to the cells without removing medium and we can detect the luminesence after incubating 3 min. This reagent generates high signal intensity with a half-life typically up to 55 min. Moreover, it is not affected by the enzyme concentration, making it suitable for high-throughput detection that requires high sensitivity.

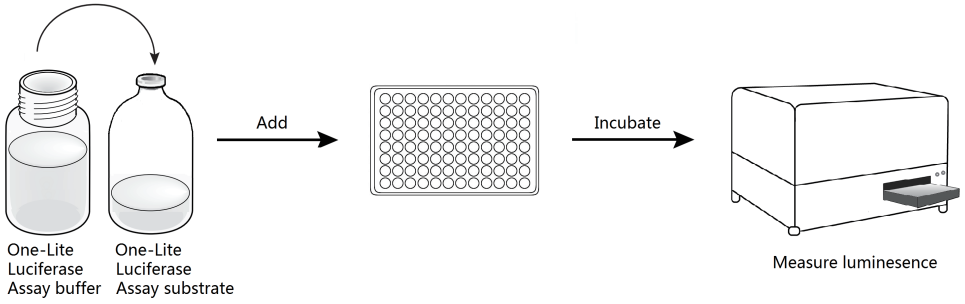

Figure 2. One-Lite Luciferase Assay protocol

Components

Components	DD1203-01	DD1203-02	DD1203-03
One-Lite Luciferase Assay Buffer	10 ml	10 × 10 ml	100 ml
One-Lite Luciferase Assay Substrate (lyophilized)	1 vial	10 × 1 vial	1 vial

Storage

Store at -30 ~ -15°C and ship at ≤0°C.

Before mixing: One-Lite Luciferase Assay Buffer can be stored at room temperature for 90 days (>90% activity) or at 2 ~ 8°C for a long time; One-Lite Luciferase Assay Substrate can be stored at room temperature for 21 days or at 2 ~ 8°C for 90 days (>85% activity).

After mixing: One-Lite reagent can be stored at room temperature for 1 day (>80% activity) or at 2 ~ 8°C for 5 days (>85% activity). It can remain stable after 10 cycles of repeated freezing and melting. The excess reagent can be stored at - 20°C for 60 days. It is recommended to store at -70°C under conditions of long-term non-use.

Applications

This product is suitable for the detection of biological activities based on reporter genes, such as Fc effector function assays, T cell activation assays, immune checkpoint assays, as well as the detection of cytokines and growth factors, etc.

Self-prepared Materials

Single/multi-channel pipette; White/black cell culture plate; Microplate reader with a luminescence detection module.

Notes

1. 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 One-Lite reagent and cultured cells shall be balanced to room temperature before beginning measurements, to ensure the consistency of test results. Pay special attention to batch operations, stacked multiwell plates require more time to balance to room temperature than monolayer placed multiwell plates, uneven temperature of multiwell plates may occur due to inadequate balance to cause a gradient effect between the center and edge of the multiwell plates.

2. One-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.

Experiment Process

Reagent Preparation

1. **Melting:** Put One-Lite Luciferase Assay Buffer at 2 ~ 8°C or room temperature for melting. The product can also be placed in a 22°C water bath for melting, **but it shall be noted that the water temperature shall not exceed 25°C.**
2. **Preparation of One-Lite Luciferase Reagent:** Add the melted whole bottle of One-Lite Luciferase Assay Buffer into One-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 One-Lite reagent has been balanced to room temperature, if One-Lite reagent is stored at -20°C or -70°C after reconstitution, after melting, it shall be gently turned upside down and mixed for 3 - 5 times before using.

Assay Procedure

1. Remove plates containing mammalian cells 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 One-Lite reagent with the same volume as the medium to each well . For example, when using a 96-well culture plate, add 100 µl One-Lite reagent into 100 µl cells to be tested.
3. Place it at room temperature for at least 3 min to make the cells are fully lysed, then the detection can be performed.