Bio-Lite Plus Luciferase Assay System

DD1208

Version 23.1

Product Description

Bio-Lite Plus Luciferase Assay System is a highly sensitive, stable, and homogeneous firefly luciferase reporter assay kit. The kit contains high-purity luciferin and an optimized reaction reagent to enable more stable reactions with greater tolerance to environments and no odor. The mixed reagent is directly added to the cell culture to lyse the cells and release luciferase, which triggers the reaction shown in Figure 1 to emit stable luminescent signals.

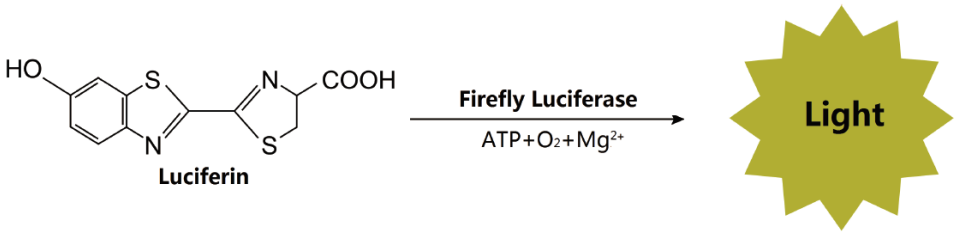

Figure 1. Principle of the Bio-Lite Plus Assay

As illustrated in Figure 2, the kit contains two components, namely assay buffer and substrate, which are mixed and added to an equal volume of cell culture. The signal can be measured after 3 min. The assay generates a high-intensity signal with a half-life of up to 55 min, independent of enzyme concentration.

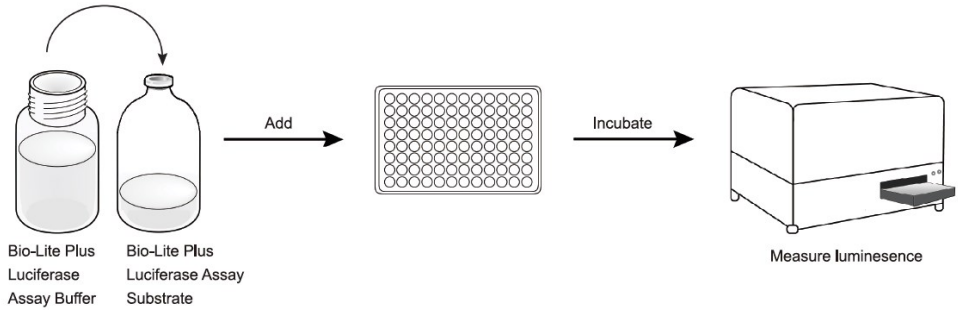

Figure 2. Bio-Lite Plus Assay Procedures

Components

Component	DD1208-01	DD1208-02	DD1208-03
Bio-Lite Plus Luciferase Assay Buffer	10 ml	10 × 10 ml	100 ml
Bio-Lite Plus Luciferase Assay Substrate (Lyophilized)	1 vial	10 vials	1 vial

Applications

This product is applicable to biological activity assays based on reporter genes, such as Fc effector assays, T cell activation assays, immune checkpoint assays, and cytokine and growth factor assays.

Storage

Long-term storage: -30 ~ -15°C; transport conditions: ≤ 0°C.

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

After mixing: Bio-Lite Plus detection reagent can be stored at room temperature for 1 day (> 80% activity) or at 2 ~ 8°C for 5 days (> 85%

activity).
The reagent remains stable after up to 10 freeze-thaw cycles. Unused reagent can be stored at -20°C for 60 days. If not used for longer periods, storage at -70°C is recommended.

Experimental Preparation

Self-prepared Materials

Single-/multi-channel pipettes; white/black cell culture plates; microplate reader equipped with a luminescence measurement module.

Operating Procedure

Reagent Preparation

1. **Thawing:** Thaw the Bio-Lite Plus Luciferase Assay Buffer at 2 ~ 8°C or room temperature. Alternatively, thaw in a 22°C water bath. **Do not exceed 25°C.**
2. **Preparation of Bio-Lite Plus Detection Reagent:** Add the entire bottle of thawed Bio-Lite Plus Luciferase Assay Buffer to the Bio-Lite Plus Luciferase Assay Substrate. Gently invert 3–5 times to completely dissolve the substrate.

▲ Before use, ensure the Bio-Lite Plus detection reagent has equilibrated to room temperature. If the reagent was stored at -20°C or -70°C, thaw and gently invert 3–5 times before use.

Assay Procedure

1. Remove the cell culture plate from the incubator and allow it to equilibrate at room temperature for 30 min.
2. Add an equal volume of Bio-Lite Plus detection reagent (equilibrated to room temperature) to the cell culture. Example: For a 96-well plate, add 100 µl of Bio-Lite Plus detection reagent to 100 µl of cell culture.
3. Incubate at room temperature for at least 3 min to allow complete cell lysis, then measure luminescence.

Notes

1. The intensity and decay rate of the luminescence depend on the reaction rate of the luciferase. Temperature directly affects the enzyme reaction rate. Therefore, before adding the reagent, both the Bio-Lite Plus detection reagent and the cell culture must be equilibrated to room temperature to ensure consistent results. During batch processing, stacked microplates require more time to equilibrate to room temperature than plates arranged in a single layer. Insufficient equilibration may cause uneven temperature distribution across the plate, leading to a temperature gradient effect between wells in the center and at the edge of the plate.
2. The Bio-Lite Plus Luciferase Assay System is compatible with microplate readers with a luminescence measurement module. The different settings and sensitivity of microplate readers may cause differences in measured luminescence signals and affect the assay window.
3. This product is for scientific research only and shall not be used for clinical diagnosis or other unauthorized purposes.