TransDetect® Bright-Luc Pro Firefly Luciferase Reporter Assay Kit

Please read the manual carefully before use

Cat. No. FR106

Version No. Version 1.0

Storage: At -18°C or below in the dark for one year. The prepared Bright-Luc Pro detection solution can be stored at -18°C or below for 30 days, avoiding repeated freezing and thawing. For long-term storage, it is recommended to store at -70°C or below.

Description

The Bright-Luc Pro Firefly Luciferase Reporter Assay Kit is an odorless, ultra-sensitive, stable, and homogeneous firefly luciferase reporter gene detection system. It enables rapid and efficient direct measurement of intracellular luciferase expression without the need for cell harvesting or washing steps. This kit contains luciferin and optimized reaction reagents, which enhance reaction stability and ensure an odorless experience. Based on the luciferase system, the prepared Bright-Luc Pro detection solution is directly added to the cell culture system. After sufficient cell lysis to release luciferase, a stable, detectable light signal is produced. The kit consists of two components: reaction buffer and substrate. The mixed Bright-Luc Pro detection solution is added in equal volume to the cell culture, and detection can be performed within 3 minutes. The signal generated by this kit is highly intense, with a half-life of up to 40 minutes, making it more suitable for high-throughput assays requiring high sensitivity. The procedure is flexible and convenient, the detection process is fast and efficient, and the detection signal is sensitive and stable.

Kit Contents

Component	FR106-01	FR106-02
Bright-Luc Pro Firefly Luciferase Reaction Buffer	10 ml	100 ml
Bright-Luc Pro Firefly Luciferase Reaction Substrate (Lyophilized)	1 vial	1 vial

Protocol

1. Reagent Preparation

(1) Thawing Reagent: Thaw the Bright-Luc Pro Firefly Luciferase Reaction Buffer at 2-8°C or room temperature. It can also be thawed in a water bath, but the water bath temperature must not exceed 25°C.

(2) Preparation of Bright-Luc Pro Detection Solution: Add the entire contents of the thawed Bright-Luc Pro Firefly Luciferase Reaction Buffer bottle to the Bright-Luc Pro Firefly Luciferase Reaction Substrate bottle. Invert the bottle gently several times to completely dissolve the substrate.

Note: A small amount of the lyophilized Bright-Luc Pro Firefly Luciferase Reaction Substrate powder may adhere to the cap and neck of the bottle. Before unscrewing the cap, tap the bottom of the bottle gently on the bench to dislodge the powder into the bottom of the bottle. Then, carefully unscrew the cap, taking care not to lose any of the lyophilized powder.

(3) Equilibration to Room Temperature: Before use, ensure the prepared Bright-Luc Pro Detection Solution is equilibrated to room temperature.

(4) Mixing Before Use: Invert the bottle 5 times to mix the solution thoroughly before use.

2. Assay Procedure

(1) Remove the cell culture plate from the incubator and place it at room temperature for at least 15 minutes to allow the plate to equilibrate completely to room temperature.

(2) Add an equal volume of the equilibrated (room temperature) Bright-Luc Pro Detection Solution to the cell culture. For example, if the culture volume in a 96-well plate is 100 µL, add 100 µL of the Bright-Luc Pro Detection Solution to the culture.

(3) Mix by shaking the plate horizontally for 3 minutes to ensure complete cell lysis. The plate is then ready for detection.

Notes

1. Multi-well plates: It is recommended to use white or black opaque well plates for assaying. Different types of well plates have different effects on the assay results. The influence between wells of the black well plates is small, and the light intensity absorption of the luminescent signal is higher; the influence between wells of the white well plates is certain, and the light intensity of the luminescent signal will hardly be lost. The transparent well plates is conducive to the observation of cell status during cell culture, but the luminescence signal interference between each assay well is great. Appropriate well plates can be selected for cell culture and assay according to different experimental needs.
2. Temperature: Temperature has a great influence on the luciferase-luciferin reaction rate. Therefore, the cell culture system to be tested and the reagents used need to be completely equilibrated to the same room temperature to ensure the consistency of the test results before assaying. For high-throughput assay requirements and multi-well plate culture systems, the temperature equilibration time will be extended accordingly during operation. For stacked culture well plates, longer equilibration time is required. The consistency of assay between wells that are not fully equilibrated will be affected, which will makes the assay results unreliable.
3. When the solvent content of the drug to be tested is high, it may interfere with the luciferase reaction, thus affecting the chemiluminescence signal. The interference of the solvent can be eliminated by setting up cell culture medium containing solvent to culture cells that do not express luciferase as control wells.
4. Microplate reader: Bright-Luc Pro Firefly Luciferase Reporter Assay Kit is compatible with microplate readers with luminescence detection modules. Due to the different settings and sensitivities of different microplate readers, the measured light signal intensity values will also be different, which may affect the detection. Select appropriate parameter settings.

Recommended Products

The main characteristics and differences among TransGen's four one-step firefly luciferase reporter assay kits are summarized in the table below. If a relatively strong luminescent signal is required and the detection can be completed within 40 minutes, FR104 or FR106 is recommended. If exceptionally high signal stability is needed, especially for large-scale or continuous operations, FR102 is recommended. If both signal intensity and stability are required for the assay, FR103 is recommended. The appropriate detection reagent can be flexibly selected based on experimental requirements and practical conditions.

Cat. No.	Product Name	Signal Intensity	Half-Life
FR102	Steady-Luc	++	>3 hours
FR103	Bio-Luc	++++	60 minutes
FR104	Bright-Luc	+++++	40 minutes
FR106	Bight-Luc Pro	+++++	40 minutes

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