

# TransDetect<sup>®</sup> Single-Luciferase (Firefly) Reporter Assay Kit

Please read the data sheet carefully prior to use.

Cat. No. FR101

Version No. Version 2.0

**Storage:** The kit stored at -20°C for one year. Cell Lysis Buffer can be stored at -20°C for one year. Prepared Luciferase Reaction Reagent should be stored in aliquots in dark at -20°C for one month or at -70°C for one year.

## Description

Firefly luciferase catalyzes the oxidation of luciferin to form oxyluciferin and produces bioluminescence in the process. *TransDetect<sup>®</sup>* Single-Luciferase (Firefly) Reporter Assay Kit uses luciferin as a substrate to detect the activity of the firefly luciferase reporter gene. It has the characteristics of rapid detection, high sensitivity, wide detection range, and no interference with the endogenous activity of cells.

## Kit Contents

Component	FR101-01-V2 (50 rxns)	FR101-02-V2 (200 rxns)
Luciferase Reaction Buffer	5 ml	20 ml
Luciferase Reaction Substrate (Lyophilized)	1 vial	4 vials
Cell Lysis Buffer (5×)	5 ml	20 ml

## Procedures

Self-prepared

Product Name	Catalogue
PBS(1×)	TransGen, Cat. FG701-01
Nuclease-free Water	TransGen, Cat. GI101-01

### 1. Reagent Preparation

#### (1) Luciferase Reaction Reagent

Take out the Luciferase Reaction Buffer from -20°C and equilibrate to room temperature to ensure that all components are completely dissolved. Use Luciferase Reaction Buffer to fully dissolve the lyophilized Luciferase Reaction Substrate (5 ml Buffer + 1 Vial Substrate), and store in the dark after aliquoting to avoid repeated freezing and thawing.

#### (2) 1×Cell Lysis Buffer

Mix 5×Cell Lysis Buffer with Nuclease-free Water at a ratio of 1:4.

### 2. Lyse Cells

Remove the cell culture medium. Carefully rinse twice with 1×PBS, and add an appropriate amount of 1×Cell Lysis Buffer. Fully lyse at room temperature for 10 minutes. Scrape the cells into a 1.5 ml microcentrifuge tube, and centrifuge at 12,000×g at 2-8°C for 10 minutes. Take the supernatant (cell lysate) for use.

Cell Culture Plate	Lysis Buffer/Well
6-well	500 µl
12-well	250 µl
24-well	100 µl
48-well	60 µl
96-well	20 µl



### 3. Fluorescence Detection

Add 100  $\mu$ l of Luciferase Reaction Reagent equilibrated to room temperature into a 1.5 ml microcentrifuge tube or opaque 96-well plate. Carefully pipette 20  $\mu$ l of cell lysate into the reaction tube or plate, and shake horizontally to mix. The activity of the firefly luciferase reporter gene was detected in a luminometer.

#### Notes

- Equilibrate to room temperature before Luciferase Reaction Reagent.
- To ensure the accuracy and reliability of the experimental data, it is recommended to add Luciferase Reaction Reagent with the multichannel pipette when measuring a large number of samples. During use, be sure to pay attention to whether the liquid absorbed by each channel of the pipette is consistent.
- Luciferase Reaction Reagent is prone to oxidation reaction. Please arrange the experiment reasonably to avoid long-term storage of samples at room temperature after thawing.

**For research use only, not for clinical diagnosis.**

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