VKEYBIO-02-2024

For Research Use Only

Not For Diagnostic Or Therapeutic Use

KeyTec® Luminescent
Cell Viability Detection Kit
Instruction Manual

1. Introduction

KeyTec® Luminescent Cell Viability Detection kit (LCV) is designed for cell viability detection. It quantifies viable cells by measuring the ATP present, a key indicator of metabolically active cells. The homogeneous assay procedure involves adding a single reagent directly to cells cultured in serum-supplemented medium.

The detection principle is based on Luminescent technology. Within the kit, D-Luciferin and luciferase react with ATP released by cells, generating a sensitive and robust luminescent signal. With a luminescent signal half-life of 3-5 hours, this kit ensures high sensitivity and robust performance, making it an ideal choice for high-throughput screening (HTS), cell proliferation and cytotoxicity assays. (Figure 1)

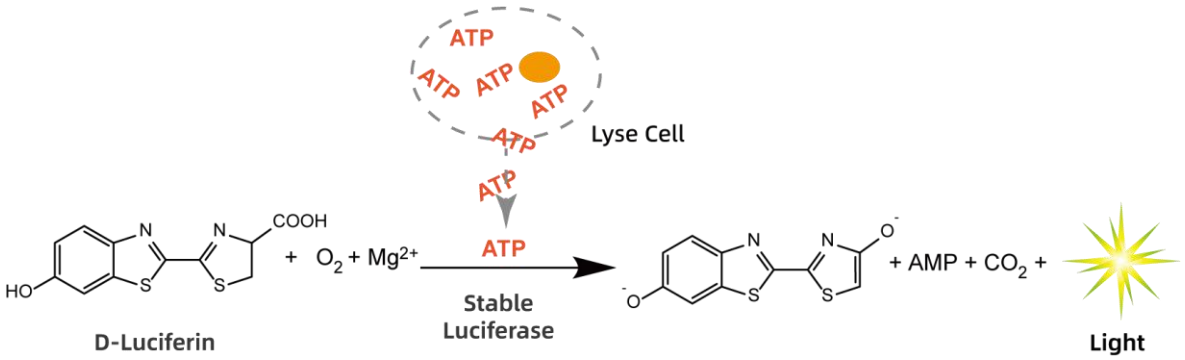

Figure 1. The luciferase reaction of KeyTec® Luminescent Cell Viability detection kit

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2. Components

CAT.	Description	Size
A2010001N	KeyTec® Luminescent Cell Viability Detection Kit (100 tests)	10 mL

Each kit contains sufficient reagents to perform 100 tests of 100 µL/well.

The kit contains the following components:

- 1 × 10 mL KeyTec® Luminescent Cell Viability Detection Reagent

CAT.	Description	Size
A2010002N	KeyTec® Luminescent Cell Viability Detection Kit (1,000 tests)	2*50 mL

Each kit contains sufficient reagents to perform 1,000 tests of 100 µL/well.

The kit contains the following components:

- 2 × 50 mL KeyTec® Luminescent Cell Viability Detection Reagent

CAT.	Description	Size
A2010003N	KeyTec® Luminescent Cell Viability Detection Kit (5,000 tests)	10*50 mL

Each kit contains sufficient reagents to perform 5,000 tests of 100 µL/well.

The kit contains the following components:

- 10 × 50 mL KeyTec® Luminescent Cell Viability Detection Reagent

CAT.	Description	Size
A2010004N	KeyTec® Luminescent Cell Viability Detection Kit (10,000 tests)	20*50 mL

Each kit contains sufficient reagents to perform 10,000 tests of 100 µL/well.

The kit contains the following components:

- 20 × 50 mL KeyTec® Luminescent Cell Viability Detection Reagent

3. Storage Conditions

- Upon receipt, store the kit below -40 °C. Up to 1 years from date of receipt.
- The kit can withstand up to 10 cycles of freezing and thawing (≥90% activity).
- We recommend preparing the mixed reagent immediately before use.

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4. Materials Required But Not Supplied

Materials	Recommended Brand	CAT.
Cell Culture Plate (96-well, clear flat bottom, white)	Corning	3610
	Greiner	655098
White Microplates Bottom Seals	VKEY-BIO	M1000302N
Pipettes	Multiple Choices	\
Microplate Shakers	Multiple Choices	\
Microplate Reader With Luminescence	Multiple Choices	\

5. Assay Procedure

Procedure	Stage	Operation
Step 1	Reagents Preparation	➢ **Melt the reagents:** Allow the reagent to thaw at 4°C or room temperature (not above 25 °C) before use. ➢ **Mix reagent after equilibration:** Once the reagent has reached to room temperature, invert the bottle several times to ensure thorough mixing of the reagent.
Step 2	Detection	➢ **Equilibrate culture plate temperature:** Equilibrate the cell culture plate to room temperature . ➢ **Add reagent:** Add an equal volume of LCV reagent to the sample to be tested. (It is recommended to add 100 µL of reagent to 100 µL of the cell culture to be tested.) ➢ **Shake the plate:** Shake for 2-5 minutes to achieve thorough cell lysis and mixing, then react at room temperature for 10 minutes to reach maximum luminescent signal. ➢ **Read Signal:** Read the luminescent signal with a microplate reader.

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6. Performance

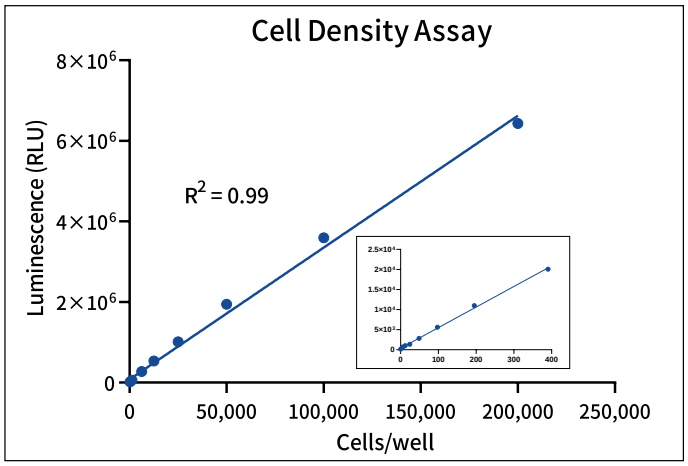

Figure 2. Correlation between Cell Number and Luminescence

Use KeyTec® Luminescent Cell Viability Detection kit to detect cell viability of HEK293 cell line. The results showed a linear relationship between the luminescent signal and the number of cells (5 - 200,000 cells/well). HEK293 cells, cultured in DMEM medium with 10% FBS, were serially diluted two-fold, starting from 200,000 cells per well in a 96-well plate. Perform the assay according to the procedure outlined in Section 5. “Assay Procedure”. Ten minutes after adding the reagent, measure the luminescent signal using the Envision's Luminescence program. (Example program details include Mirror: Luminescence, Em filter: Luminescence 700, Measurement height: 6.5 mm, and Measurement time: 1 s).

Tip: The data provided above is for reference only. Actual results may vary depended on the performance of the microplate reader used.

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