# 3D ATP Luminescent Cell Viability Assay Kit

**Cat. No.** KITG-033 **Lot. No.** (See product label)

## SPECIFICATION

| **Product Overview** | |
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| **Description** | ATP is the most important energy molecule within cells and can be used to measure cellular metabolic activity. It exhibits a good linear relationship with the number of viable cells. Therefore, ATP content can be used to reflect the number of viable cells. This kit utilizes an ATP-dependent luciferase-catalyzed luciferin luminescence reaction to determine intracellular ATP content through chemiluminescence signal detection, thereby assessing cell viability or quantifying viable cell numbers with high sensitivity and a broad linear range. This reagent contains high-purity luciferin substrate, thermostable luciferase, and optimized reaction reagents, providing stronger cell lysis capability for 3D microtissue culture cell viability analysis. Upon addition of this product to cell cultures, cell spheroids are lysed, releasing ATP and initiating the reaction, producing a stable light signal. The luminescence intensity is proportional to the amount of ATP, i.e., the number of viable cells within a certain range, enabling quantitative detection of viable cell numbers. |
| **Form** | Luminescent 3D Cell Viability Assay Kit |
| **Applications** | Measurement of cellular metabolic activity and quantification of viable cell numbers in 3D microtissue cultures through ATP bioluminescence detection. Suitable for 96-well plate format. For research use only. |
| **Notes** | Features & Benefits: Convenient and fast: The detection reagent provided in the kit is ready-to-use, with stable readings and rapid detection speed. High sensitivity: Applied to 3D microtissue detection with higher signal-to-noise ratio. Efficient experiment: |

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Data can be recorded within 30 minutes or less after reagent addition. Strong lysis capability: The optimized reaction reagent has stronger cell lysis ability, suitable for 3D microtissue culture cell viability analysis. Higher throughput: Compatible with small sample detection and high-throughput screening of large sample volumes. Assay Protocol: 1. Reagent preparation: Thaw the reagent in advance at 4°C or room temperature (do not thaw above 25°C to avoid activity loss). If necessary, aliquot the reagent. After equilibrating to room temperature, gently invert to mix thoroughly to obtain a homogeneous solution (if a small amount of precipitate appears, mix several more times to dissolve; this does not affect reagent performance). 2. Remove the cell culture plate to be tested and equilibrate the plate and its contents to room temperature (22-25°C) for approximately 30 minutes. 3. Add an equal volume of 3D viability detection reagent to the sample to be tested. (For example, for a 96-well plate, add 100 µL detection reagent to 100 µL cell-containing medium). 4. Shake and mix for 5 minutes to promote cell spheroid lysis. 5. Incubate the 96-well plate at room temperature for an additional 25 minutes to stabilize the luminescence signal. (The time required for detection reagent penetration into microtissues and luminescence signal stabilization is related to cell type, culture time, and microtissue size. Repeated pipetting can be used as an alternative to shaking.) 6. Perform chemiluminescence detection using a multifunctional microplate reader with chemiluminescence detection capability. Please set the corresponding parameters according to instrument requirements. The detection time per well is generally 0.25-1 second or longer, and should be appropriately adjusted based on the instrument's detection sensitivity. Record the luminescence values. Precautions: 1. The reagent contains luciferase; repeated freeze-thaw cycles will affect its activity. It is recommended to aliquot and store at -20°C protected from light. Both the reagent and cell samples must be equilibrated to room temperature before use to avoid effects on enzyme catalytic efficiency. 2. The reaction rate and luminescence intensity of luciferase are affected by the chemical environment. Different types of media and sera exhibit differences in luminescence intensity and decay rates. Additionally, high drug concentrations may

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| | interfere with the luciferase reaction, affecting the luminescence signal. It is recommended to set up control wells containing drug-containing cell culture medium to exclude solvent interference. 3. This reagent is sensitive to light. Exposure to light during storage will accelerate the decay of luminescence intensity. If the reagent is transferred from its original container, ensure it is stored protected from light. 4. Avoid repeatedly inserting pipette tips into the reagent bottle during operation. 5. For your safety and health, please wear a lab coat and disposable gloves during operation. 6. This product is for research use only! |
| **Storage** | Store at -15 to -25°C protected from light. Shelf life: 1 year. |
| **Shipping** | Shipped on dry ice. |
| **Labeling Efficiency** | For research use only. |

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