

# Cell Biology

细胞生物学系列产品

# 01

## Mycoplasma

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TransDetect® Luciferase Mycoplasma Detection Kit  
 TransDetect® PCR Mycoplasma Detection Kit  
 TransSafe™ Mycoplasma Elimination Reagent (TransMyco Plus) Kit  
 TransSafe™ Mycoplasma Prevention Reagent

# 04

## Cell Culture and Transfection

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TransSerum® EQ Fetal Bovine Serum  
 TransIntro® EL Transfection Reagent  
 TransIntro® PL Transfection Reagent

# 08

## Cell Detection

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### Cell Isolation

Human Peripheral Blood Lymphocyte Isolation Separation Solution

### Cell Viability Detection

TransDetect® Cell Counting Kit (CCK)  
 TransDetect® Cell LIVE/DEAD Viability/Cytotoxicity Detection Kit

### Cell Proliferation Detection

TransDetect® EdU Imaging Kits  
 TransDetect® EdU Flow Cytometry Kits

### Cell Apoptosis Detection

TransDetect® Annexin V-FITC/PI Cell Apoptosis Detection Kit  
 TransDetect® Annexin V-EGFP/PI Cell Apoptosis Detection Kit  
 TransDetect® Annexin V-PE/7-AAD Cell Apoptosis Detection Kit  
 TransDetect® Annexin V-PE/TransDG Cell Apoptosis Detection Kit  
 TransDetect® In Situ Click TUNEL Imaging Kit-488 Fluorophore

### Luciferase Reporter Assay

TransDetect® Single-Luciferase (Firefly) Reporter Assay Kit  
 TransDetect® Single-Luciferase (Renilla) Reporter Assay Kit  
 TransDetect® Double-Luciferase Reporter Assay Kit

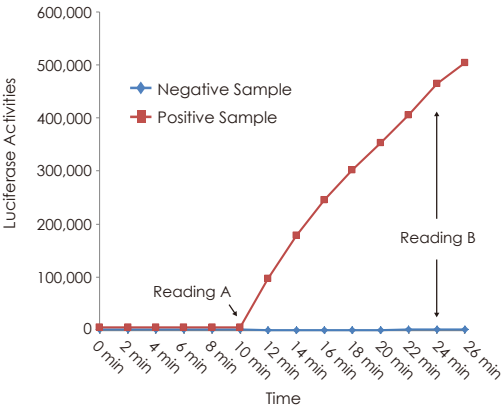
# Mycoplasma



# TransDetect<sup>®</sup> Luciferase Mycoplasma Detection Kit (FM301)

This product is designed using an enzyme unique to mycoplasma. This enzyme degrades MycoDetect Substrate and converts ADP to ATP. Luciferase catalyzes oxidation of luciferin to produce bioluminescence in the presence of ATP. Cell cultures can be characterized for the presence of mycoplasma contamination by detecting bioluminescence. As this assay can only detect bioactive mycoplasma, the results will be more accurate than that of the PCR assay. The method has high sensitivity, simple operation and time saving.

01



|                  | TransGen | Company L |
|------------------|----------|-----------|
| Original Sample  | +        | +         |
| 1:5 dilution     | +        | +         |
| 1:25 dilution    | +        | +         |
| 1:125 dilution   | +        | +/-       |
| 1:625 dilution   | +/-      | -         |
| 1:3125 dilution  | -        | -         |
| Negative control | -        | -         |

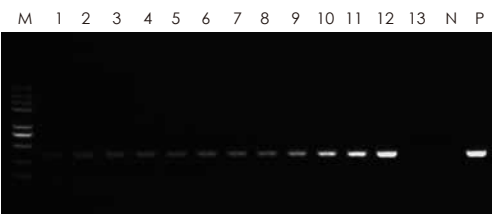
+ Sample contaminated with mycoplasma  
 +/- Need to check and verify  
 - Samples not contaminated with mycoplasma

# TransDetect<sup>®</sup> PCR Mycoplasma Detection Kit (FM311)

This product detects the presence of mycoplasma contamination in biological materials such as cultured cells by PCR method. Highly specific primers have been designed to amplify a fragment of 16S rRNA coding DNA that is conserved across all commonly-known mycoplasma species. The kit includes an optimized supermix and primer, ultrapure water and positive control template. Using this kit, cell culture supernatants can be tested directly without DNA extraction. The kit provides a very easy-to-use, simple, fast (within 2 hours), specific and sensitive PCR-based mycoplasma detection method.

- High sensitivity: Able to detect as low as 20 copies of mycoplasma genome.
- High specificity: Only detect mycoplasma DNA, not eukaryotic or bacterial DNA.
- Easy to use: No need to extract genomic DNA, suitable for the detection of a large number of cell samples.
- Positive control and negative control to ensure the accuracy of PCR test results.

02



Sensitivity of mycoplasma detection by PCR

- M: Trans2K<sup>®</sup> Plus II DNA Marker
- 1: 20 copies of mycoplasma DNA
  - 2: 100 copies of mycoplasma DNA
  - 3: 1:1000 diluted cell culture medium
  - 4: 1:800 diluted cell culture medium
  - 5: 1:400 diluted cell culture medium
  - 6: 1:200 diluted cell culture medium
  - 7: 1:100 diluted cell culture medium
  - 8: 1:50 diluted cell culture medium
  - 9: 1:20 diluted cell culture medium
  - 10: 1:10 diluted cell culture medium
  - 11: 1:5 diluted cell culture medium
  - 12: Undiluted cell culture medium
  - 13: Diluent
  - N: Negative control
  - P: Positive control

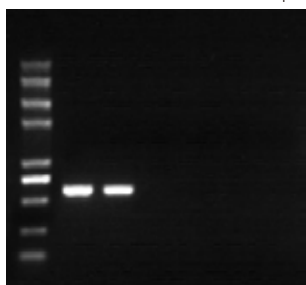
# TransSafe™ Mycoplasma Elimination Reagent (TransMyco Plus) Kit (FM421)

03

This product contains two types of antibiotic components to effectively eliminate mycoplasma contamination. The first type interferes with protein expression of mycoplasma while the second type interferes with DNA replication of mycoplasma. This product has minimum impact on eukaryotic cells with lower cytotoxicity to maintain high cell viability.

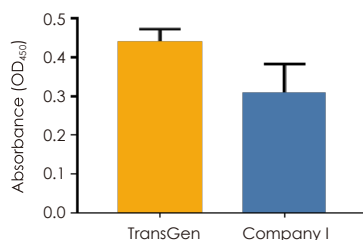
- High mycoplasma removal efficiency
- Active at low working concentration. Low cytotoxicity. Suitable for a wide range of cell types
- Easy to use. Add to the culture medium directly.

M Untreated TransGen Company I



M: Trans2K® Plus II DNA Marker

Mycoplasma removal efficiency was determined by PCR.



Cell viability was detected by MTT.

# TransSafe™ Mycoplasma Prevention Reagent (FM501)

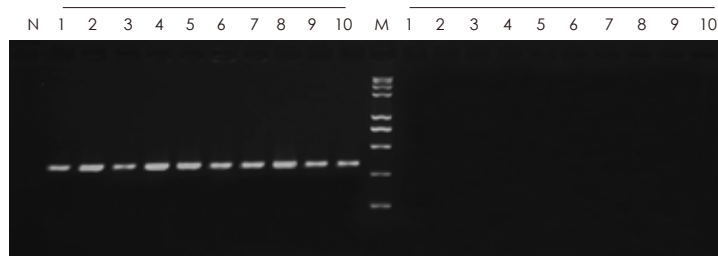
04

This product is a mixture of three mycoplasma antibiotics including macrolides, tetracyclines and fluoroquinolone derivatives, which can effectively interfere with protein expression and DNA replication of mycoplasma. This product can effectively prevent mycoplasma contamination during cell culture process, and can also prevent common gram-positive and gram-negative bacteria. It can be used as a better substitute of common penicillin and streptomycin antibiotics in daily cell culture, with low concentration and almost no cytotoxicity.

- Maximum preventive effect on mycoplasma contamination
- Active at low working concentration. Low cytotoxicity. Suitable for a wide range of cell types.
- Easy to use. Add to the culture medium directly.
- An alternative to Penicillin-Streptomycin with wide range of prevention from common gram-positive and gram-negative bacteria.

Cells contaminated with mycoplasma

Cells cultured with TransGen product



M: Trans2K® Plus II DNA Marker

N: Negative control

1: HeLa

2: HEK-293

3: Hep G2

4: MCF-7

5: A549

6: K562

7: SP2/O

8: CHO

9: BHK-21

10: Neuro-2a

Preventive effect on mycoplasma contamination determined by PCR

# Cell Culture and Transfection



# TransSerum® EQ Fetal Bovine Serum (FS201)

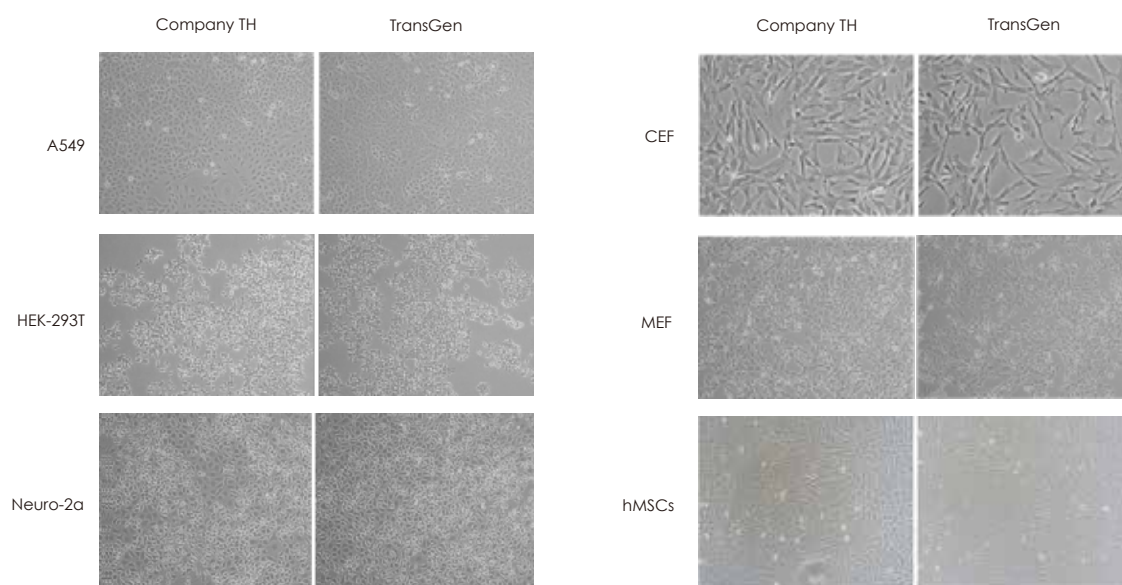
# 01

- Processed from Australian healthy fetal bovine blood as raw material. Triple 0.1 micron filtration.
- No virus contamination. Negative Mycoplasma. Low endotoxin level.
- Cultured cells grow fast with short doubling time and high cloning efficiency.
- Suitable for the culture of various types of cells such as mesenchymal stem cells.

## Successfully cultured cell types with TransSerum® EQ Fetal Bovine Serum

|            |         |          |            |           |         |            |                                   |
|------------|---------|----------|------------|-----------|---------|------------|-----------------------------------|
| 5637       | CEK     | HEK-293T | Marc 145   | OV45      | Sp2/0   | HEK-293A   | NS-1                              |
| 7721       | CHO-K1  | HeLa     | MCF7       | P815      | STO     | NIH/3T3-L1 | PhoenixA                          |
| A2780      | COS-1   | Hep G2   | MDA-MB-231 | PANC-1    | SW480   | Ba-F3      | PK136                             |
| A549       | COS-7   | HL-60    | MEF        | PC-12     | SW620   | BHK        | SGC7901                           |
| B16-F10    | DF-1    | HT-29    | MGC803     | PK15      | T24     | BTC        | LT-12                             |
| BEL-7402   | DLD-1   | hUC-MSC  | MIA PaCa-2 | PT67      | TE-1    | CNE-1      | PANC-02                           |
| BHK21      | EC109   | Huh7     | MKN-28     | RAW264.7  | THP-1   | MDCK       | HRPTEpiC                          |
| BGC-823    | EJ      | HUVEC    | MKN-45     | Sf9       | U87     | MDBK       | AT II                             |
| C3H/10T1/2 | GLC-82  | Jurkat   | MRC-5      | SGC-7901  | U937    | HTB-72     | Chicken mesenchymal stem cells    |
| C6         | H9c2    | K-562    | Neuro-2a   | SH-SY5Y   | Vero    | GK1.5      | Goat luteal cell                  |
| Caco-2     | HCT 116 | L929     | NIH3T3     | SMMC-7721 | WEHI-3B | CRL-5908   | Primary porcine endothelial cells |
| CEF        | HEK-293 | LS 174T  | NRK        | SK-OV-3   | WI38    | CRL-5807   | Fin cell of grouper               |
|            |         |          |            |           |         | U251       |                                   |

## Effect of TransSerum® EQ Fetal Bovine Serum on different cell cultures





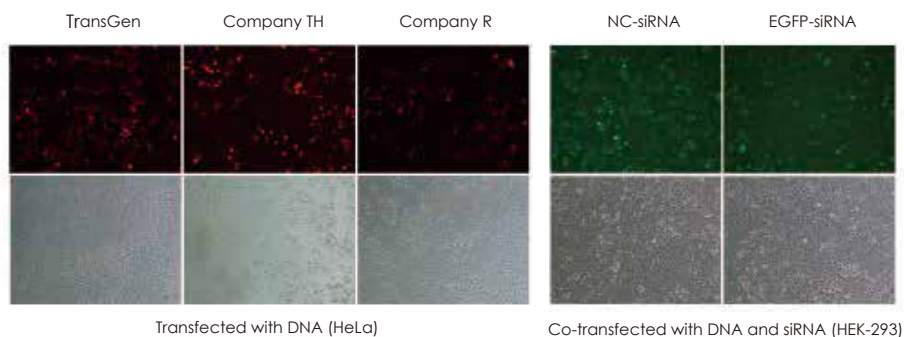
# TransIntro™ EL Transfection Reagent (FT201)

- High transfection efficiency: Improve the transfection efficiency of a variety of difficult-to-transfect cells.
- Low cytotoxicity: Minimum effect on cellular physiological processes.
- Simple operation: No need to change the medium after transfection, tolerance with serum and antibiotics.
- Broad range of applications: Applicable for both DNA and RNA.

# 02

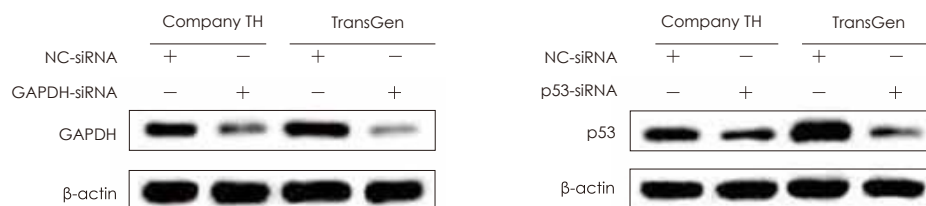
## Successfully transfected cell types with TransIntro™ EL Transfection Reagent

|          |          |        |            |                                    |
|----------|----------|--------|------------|------------------------------------|
| A549     | COS-1    | Hep G2 | MEF        | PANC-1                             |
| B16-F10  | DLD-1    | HL-60  | MIA PaCa-2 | PT67                               |
| BHK-21   | HCT-116  | K562   | Neuro-2a   | SGC-7901                           |
| BTC      | HEK-293  | L929   | NIH/3T3    | SH-SY5Y                            |
| C2C12CEF | HEK-293T | NRK    | P815       | Porcine epithelial granulosa cells |
| CHO      | HeLa     | Vero   | U2OS       | Bovine fibroblasts                 |
| CEF      | COS-7    | STO    | MARC-145   | Pilose antler stem cells           |
| MCF-7    |          |        |            |                                    |



Transfected with DNA (HeLa)

Co-transfected with DNA and siRNA (HEK-293)



siRNA transfection effect with HEK-293 cells detected by Western Blot



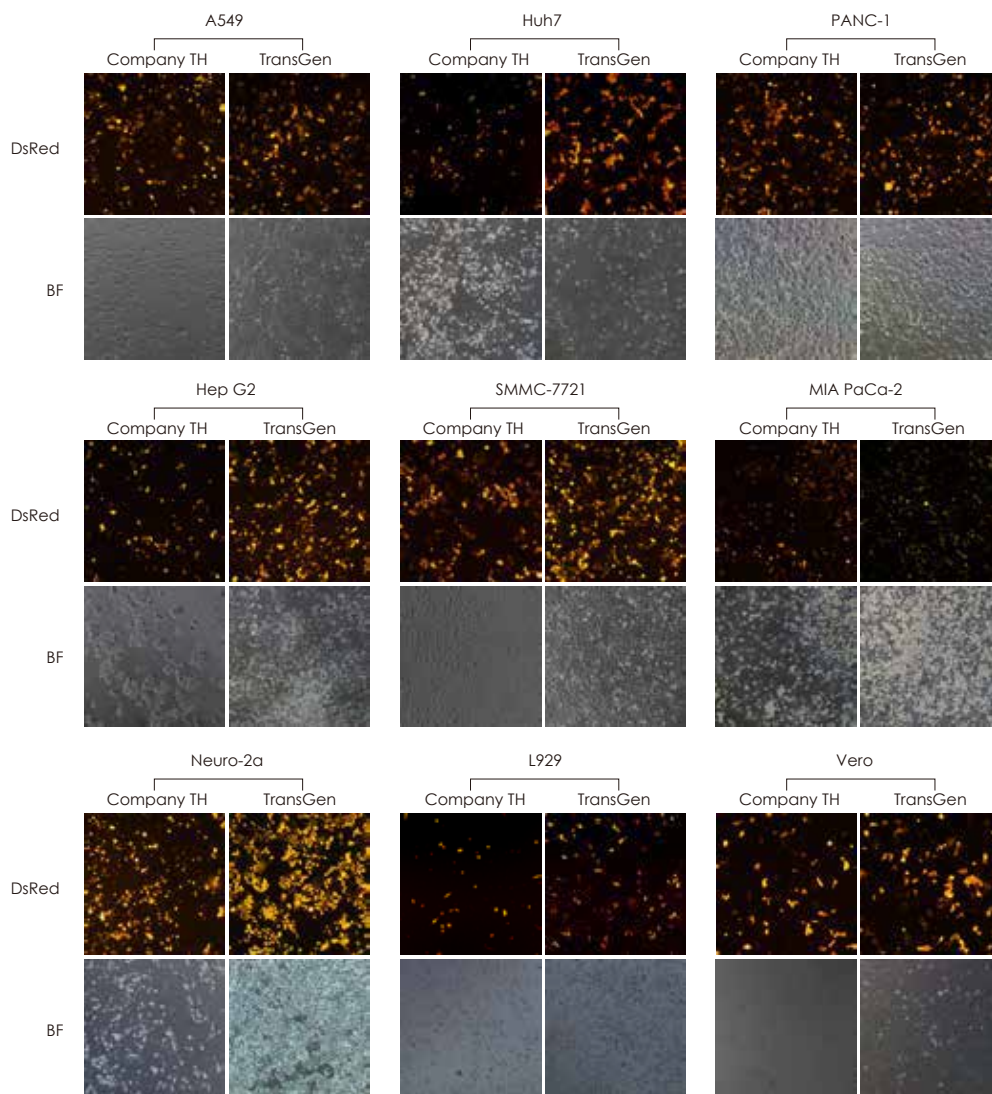
# TransIntro® PL Transfection Reagent (FT301)

- Highly efficient and stable transfection for tumor cell lines, such as lung cancer, colorectal cancer, liver cancer, pancreatic cancer, facilitating the establishment of stable and reliable cell models.
- Low cytotoxicity and minimum effect on cellular physiological processes.
- Tolerance with antibiotics.

# 03

Successfully transfected cell types with TransIntro® PL Transfection Reagent

| Tumor cell lines |          |            | Neural cell lines | Other cell lines |          | Primary cell lines |
|------------------|----------|------------|-------------------|------------------|----------|--------------------|
| A549             | HCT 116  | MCF-7      | Neuro-2a          | BHK21            | NIH3T3   | HUVEC              |
| B16-F10          | Huh7     | MIA PaCa-2 | SH-SY5Y           | CHO              | Vero     | MEF                |
| DLD-1            | HT-29    | PANC-1     |                   | HEK-293          | L929     | MCM                |
| HeLa             | SGC-7901 | SMMC-7721  |                   | HEK-293T         | Marc 145 |                    |
| Hep G2           | SW480    |            |                   | BTC              |          |                    |



# Cell Detection



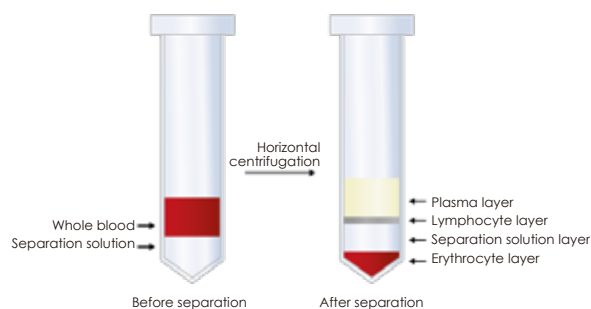
# Cell Separation

## Human Peripheral Blood Lymphocyte Separation Solution (FB102)

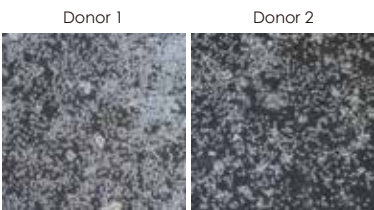
01

- Osmotic molar concentration is similar to that of human peripheral blood cells.
- The number of isolated lymphocytes is more than  $1 \times 10^6$  cells /mL whole blood.
- The lymphocyte viability after separation is above 95%
- This product is ready-to-use, and the lymphocytes separated under aseptic conditions can be used for in vitro culture and immunological detection.

### Separation schematic diagram



### Good cell morphology



The isolated lymphocytes using TransGen product showed good cell morphology.

### Cell number and cell viability of isolated lymphocytes are high.

| Testing index  | Donor 1            | Donor 2            | Donor3             | Donor 4            | Donor 5           |
|--|--------------------|--------------------|--------------------|--------------------|-------------------|
| Cell number of isolated lymphocytes / ml whole blood | $1.51 \times 10^6$ | $1.78 \times 10^6$ | $1.12 \times 10^6$ | $1.33 \times 10^6$ | $1.5 \times 10^6$ |
| Cell viability of isolated lymphocytes               | 98.22%             | 98.59%             | 97.08%             | 98.41%             | 99.28%            |

Using TransGen product, the number of isolated lymphocytes is more than  $1 \times 10^6$  cells /mL whole blood and the lymphocyte viability after separation is above 95%.

# Cell Viability Detection

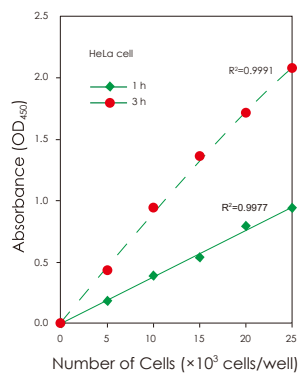
## 01

### TransDetect<sup>®</sup> Cell Counting Kit (CCK) (FC101)

Designed for cell proliferation assays as well as cytotoxicity assays by utilizing a water-soluble tetrazolium salt. The faster the cell proliferation, the lower cytotoxicity and the more cells, the darker the color. The color development has a good linear relationship with the number of cells.

- Fast detection and high sensitivity.
- Low cytotoxicity.
- Broad linear range.
- Good stability and high repeatability.

#### CCK sensitivity test



#### Extremely low cytotoxicity of CCK



3 hours incubation

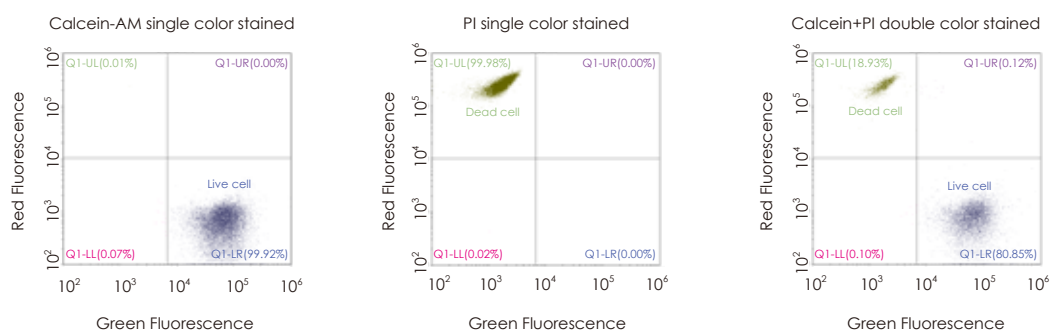
6 hours incubation

24 hours incubation

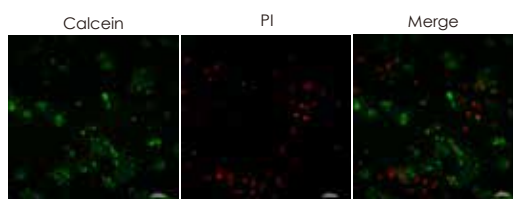
# 02

## TransDetect<sup>®</sup> Cell LIVE/DEAD Viability/ Cytotoxicity Detection Kit (FC301)

- Simple operation, high specificity of fluorescence
- Low cytotoxicity
- Quantification or sorting can be performed by flow cytometry



The HeLa living cells and the fixed permeabilized dead cells were mixed at a ratio of 4:1, and the results were analyzed by flow cytometry after double staining.



Fluorescence microscopy results of double stained Hep G2 cells

# Cell Proliferation Detection

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## 01

### **TransDetect<sup>®</sup> EdU Imaging Kits** (FU101/FU111/FU121/FU131)

The kit employs a nucleoside analog to thymidine-EdU(5-ethynyl-2'-deoxyuridine) for detection of cell proliferation ability. During DNA replication, EdU can be inserted into the newly synthesized DNA double-stranded structure, followed by labeling with fluorophores by click reaction. Cell proliferation ability is detected by this rapid and sensitive method which demonstrates the activity of DNA replication in the S phase of the cell cycle based on fluorescence intensity. Compared with traditional BrdU detection method, it is easy to operate, no need of additional steps such as antibody labeling, and has high sensitivity and specificity. It is suitable for experiments such as drug screening, cell proliferation assay, and cytotoxicity assay.

- Easy to use, no antibodies required
- High sensitivity and specificity
- Broad range of applications

## 02

### **TransDetect<sup>®</sup> EdU Flow Cytometry Kits** (FU201/FU211/FU221/FU231)

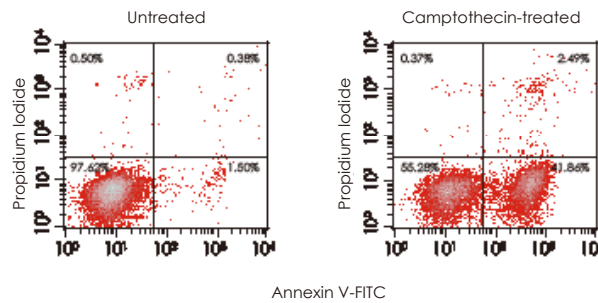
The kit employs a nucleoside analog to thymidine-EdU(5-ethynyl-2'-deoxyuridine) for detection of cell proliferation ability. During DNA replication, EdU can be inserted into the newly synthesized DNA double-stranded structure, followed by labeling with fluorophores by click reaction. Cell proliferation ability is detected by this rapid and sensitive method based on flow cytometry which demonstrates the activity of DNA replication in the S phase of the cell cycle. Compared with traditional BrdU detection method, it is easy to operate, no need of additional steps such as antibody labeling, and has high sensitivity and specificity. It is suitable for experiments such as drug screening, cell proliferation assay, and cytotoxicity assay.

- Easy to use, no antibodies required
- High sensitivity and specificity
- Broad range of applications

# Cell Apoptosis Detection

## TransDetect® Annexin V-FITC/PI Cell Apoptosis Detection Kit (FA101)

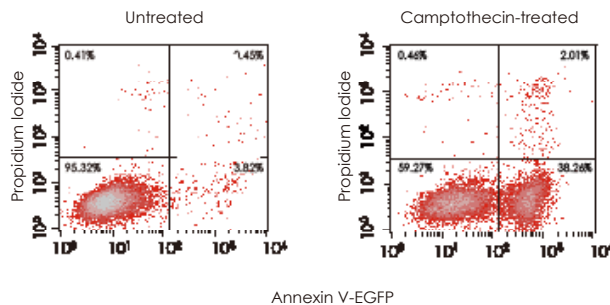
- With Annexin V-FITC as a probe, apoptotic adherent cells and suspension cells can be detected by flow cytometry or fluorescence microscopy.
- The combination of Annexin V-FITC and PI staining allows differentiation among different stages of apoptotic cells.



Flow cytometry results of apoptosis in Jurkat T lymphoma cells induced by Camptothecin

## TransDetect® Annexin V-EGFP/PI Cell Apoptosis Detection Kit (FA111)

- With Annexin V-EGFP as a probe, apoptotic adherent cells and suspension cells can be detected by flow cytometry or fluorescence microscopy.
- The combination of Annexin V-EGFP and PI staining allows differentiation among different stages of apoptotic cells.



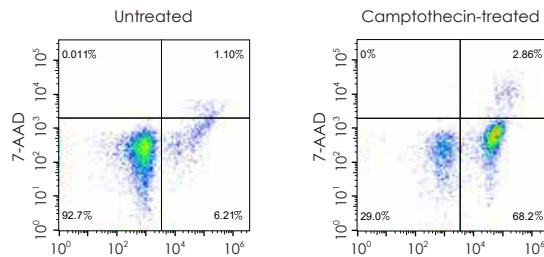
Flow cytometry results of apoptosis in Jurkat T lymphoma cells induced by Camptothecin



# TransDetect® Annexin V-PE/7-AAD Cell Apoptosis Detection Kit (FA121)

- With Annexin V-PE as a probe, apoptotic adherent cells and suspension cells can be detected by flow cytometry or fluorescence microscopy.
- The combination of Annexin V-PE and 7-AAD staining allows differentiation among different stages of apoptotic cells.

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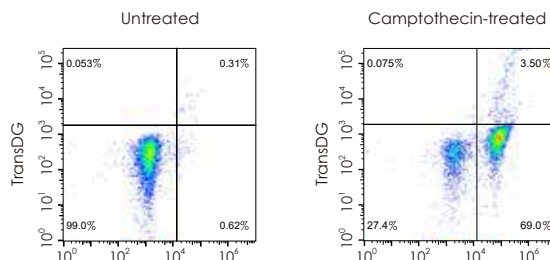


Flow cytometry results of apoptosis in Jurkat T lymphoma cells induced by Camptothecin

# TransDetect® Annexin V-PE/TransDG Cell Apoptosis Detection Kit (FA131)

- With Annexin V-PE as a probe, apoptotic adherent cells and suspension cells can be detected by flow cytometry or fluorescence microscopy.
- The combination of Annexin V-PE and TransDG staining allows differentiation among different stages of apoptotic cells.

04

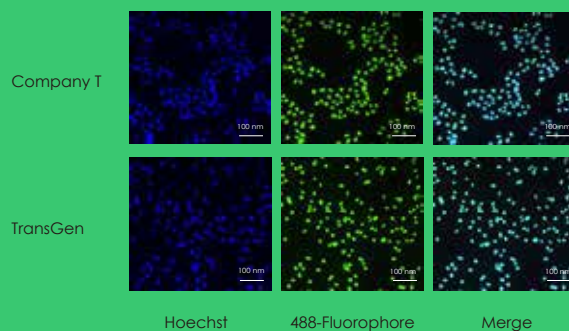


Flow cytometry results of apoptosis in Jurkat T lymphoma cells induced by Camptothecin

# 05

## **TransDetect<sup>®</sup> In Situ Click TUNEL Imaging Kit-488 Fluorophore (FA301)**

- Low toxicity, enabling by elimination of highly toxic organic arsenic compounds in the buffer on which the traditional TUNEL reaction relies.
- High sensitivity and specificity.
- Simple and fast operation
- Applicable for detecting different cell or tissue samples



After Hela cells were treated with DNase I, the fluorescence imaging results of apoptosis were detected by Company T and TransGen products respectively.

# Luciferase Reporter Assay

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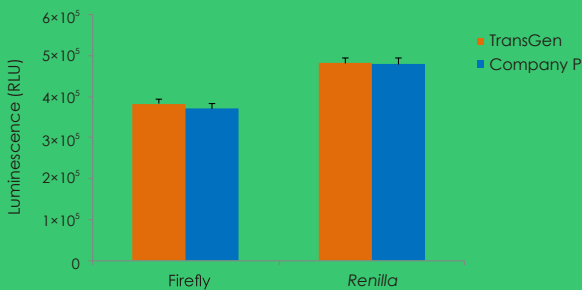
## ***TransDetect*<sup>®</sup> Single-Luciferase (Firefly) Reporter Assay Kit** (FR101)

## ***TransDetect*<sup>®</sup> Single-Luciferase (*Renilla*) Reporter Assay Kit** (FR111)

## ***TransDetect*<sup>®</sup> Double-Luciferase Reporter Assay Kit** (FR201)

The activity of firefly luciferase reporter gene was detected with luciferin as the substrate, and the activity of *Renilla* luciferase reporter gene was detected with coelenterin as the substrate.

- Rapid detection
- High sensitivity
- Wide detection range
- No interference with cellular endogenous activity



## Mycoplasma

| Product Name  | Cat. No. | Specifications |
|---|----------|----------------|
| <i>TransDetect</i> <sup>®</sup> Luciferase Mycoplasma Detection Kit               | FM301-01 | 25 rxns        |
|   | FM301-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> PCR Mycoplasma Detection Kit                      | FM311-01 | 100 rxns       |
| <i>TransSafe</i> <sup>™</sup> Mycoplasma Elimination Reagent (TransMyco Plus) Kit | FM421-01 | 10 mL          |
|   | FM421-02 | 20 mL          |
| <i>TransSafe</i> <sup>™</sup> Mycoplasma Prevention Reagent                       | FM501-01 | 1 mL           |
|   | FM501-02 | 5 mL           |

## Cell Culture and Transfection

| Product Name  | Cat. No. | Specifications  |
|---|----------|-----------------|
| <i>TransSerum</i> <sup>®</sup> EQ Fetal Bovine Serum      | FS201-02 | 500 mL          |
| <i>TransSerum</i> <sup>®</sup> FQ Fetal Bovine Serum      | FS301-02 | 500 mL          |
| <i>TransIntro</i> <sup>®</sup> EL Transfection Reagent    | FT201-01 | 0.75 mL         |
|   | FT201-02 | 2×0.75 mL       |
| <i>TransIntro</i> <sup>®</sup> PL Transfection Reagent    | FT301-01 | 0.75 mL         |
|   | FT301-02 | 2×0.75 mL       |
| <i>TransIntro</i> <sup>®</sup> EL/PL Transfection Reagent | FT231-02 | 0.75 mL+0.75 mL |

## Cell Detection

| Product Name  | Cat. No. | Specifications |
|---|----------|----------------|
| RBC Lysis Buffer (1×)   | FB101-01 | 100 mL         |
| Human Peripheral Blood Lymphocyte Separation Solution                                   | FB102-02 | 200 mL         |
| <i>TransDetect</i> <sup>®</sup> Cell Counting Kit (CCK)                                 | FC101-01 | 1 mL           |
|   | FC101-02 | 5 mL           |
|   | FC101-03 | 2×5 mL         |
|   | FC101-04 | 6×5 mL         |
| <i>TransDetect</i> <sup>®</sup> Cell LIVE/DEAD Viability/Cytotoxicity Detection Kit     | FC301-01 | 100 rxns       |
| <i>TransDetect</i> <sup>®</sup> EdU Imaging Kit-488 Fluorophore                         | FU101-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Imaging Kit-555 Fluorophore                         | FU111-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Imaging Kit-594 Fluorophore                         | FU121-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Imaging Kit-647 Fluorophore                         | FU131-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Flow Cytometry Kit-488 Fluorophore                  | FU201-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Flow Cytometry Kit-555 Fluorophore                  | FU211-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Flow Cytometry Kit-594 Fluorophore                  | FU221-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> EdU Flow Cytometry Kit-647 Fluorophore                  | FU231-01 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> Annexin V-FITC/PI Cell Apoptosis Detection Kit          | FA101-01 | 25 rxns        |
|   | FA101-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> Annexin V-EGFP/PI Cell Apoptosis Detection Kit          | FA111-01 | 25 rxns        |
|   | FA111-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> Annexin V-PE/7-AAD Cell Apoptosis Detection Kit         | FA121-01 | 25 rxns        |
|   | FA121-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> Annexin V-PE/TransDG Cell Apoptosis Detection Kit       | FA131-01 | 25 rxns        |
|   | FA131-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> Cell LIVE/DEAD Viability/Cytotoxicity Detection Kit     | FC301-01 | 100 rxns       |
| <i>TransDetect</i> <sup>®</sup> In Situ Click TUNEL Imaging Kit-488 Fluorophore         | FA301-01 | 10 rxns        |
|   | FA301-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> In Situ Click TUNEL Imaging Kit-555 Fluorophore         | FA311-01 | 10 rxns        |
|   | FA311-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> In Situ Click TUNEL Imaging Kit-594 Fluorophore         | FA321-01 | 10 rxns        |
|   | FA321-02 | 50 rxns        |
| <i>TransDetect</i> <sup>®</sup> Single-Luciferase (Firefly) Reporter Assay Kit          | FR101-01 | 50 rxns        |
|   | FR101-02 | 200 rxns       |
| <i>TransDetect</i> <sup>®</sup> Single-Luciferase ( <i>Renilla</i> ) Reporter Assay Kit | FR111-01 | 50 rxns        |
|   | FR111-02 | 200 rxns       |
| <i>TransDetect</i> <sup>®</sup> Double-Luciferase Reporter Assay Kit                    | FR201-01 | 50 rxns        |
|   | FR201-02 | 200 rxns       |



## TRANSGEN BIOTECH CO., LTD.

**Website** [www.transgen.com](http://www.transgen.com)

**Phone** +86-10-57815030

**Customer Service** +86-400-898-0321

**E-mail** [custserv@transgenbiotech.com](mailto:custserv@transgenbiotech.com)

**Complaints** +86-10-57815020

[complaints@transgen.com](mailto:complaints@transgen.com)

