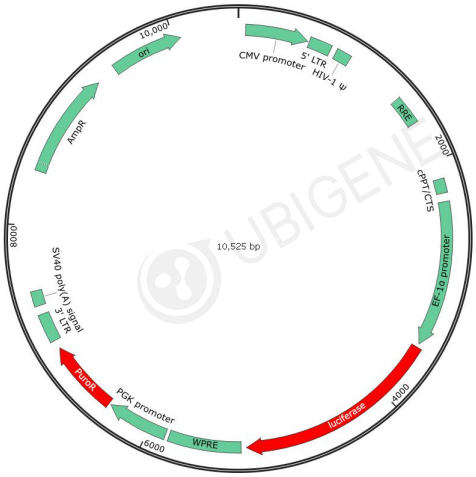
Cell Use Instruction - MM.1S-Luc Cell Line

Product Info

Catalog	YC-B007-Luc-P		
Cell line	MM.1S-Luc	Morphology	Lymphoblastoid; Suspension growth and slight adherence
Fluorescent & resistance	No fluorescence，Puro	Passage ratio	1：2-1：4
Culture method	90%RPMI-1640+10%FBS Ubigene didn't use P/S. But client could use P/S after cells grow in good condition after thawing.		
Cryopreservation solution	50%RPMI-1640+40%FBS+10%DMSO		
Antibiotic concentration for maintenance	Puro=0.5μg/mL Note: To maintain stable expression of the luciferase gene, maintain cells under antibiotic selection during optimal growth conditions.		
Special Note	The adherent part of the cell can be directly blown down or digested and collected		

Product Validation Data

1) Plasmid map



(2) Luciferase validation process

Luciferase activity was detected using the Dual-Luciferase® Reporter Assay System Kit (Promega, Cat: E1910), and the firefly luciferase reaction intensity was read in the Microplate Reader (BioTek, Synergy LX).

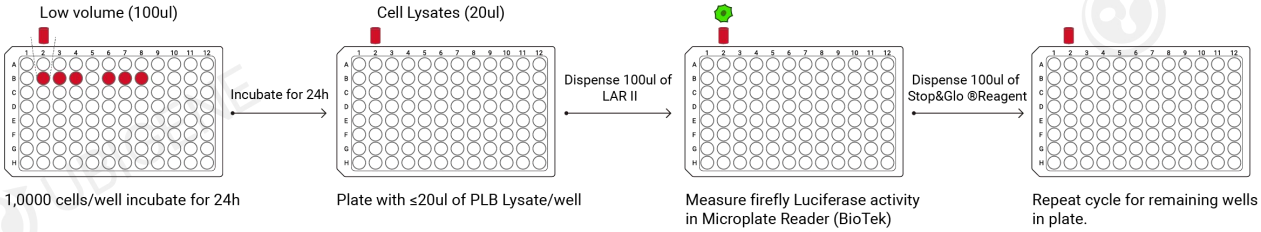


Figure 1. Luciferase activity validation workflow

(3) Luciferase assay results

Sample Name	Duplicated well 1	Duplicated well 2	Duplicated well 3	Average value	Ratio
MM.1S-Luc	358613	383989	417323	386641.667	1053.520
MM.1S	350	370	381	367.000	

Introduction of luciferase stable cell line

Reporter gene system is widely used in the study of eukaryotic gene expression and cell physiology. It is a common method to improve the accuracy of experiments. Luciferase is a common reporter gene system that uses luciferin or firefly aldehyde as the substrate to detect luciferase activity. It has been widely used in the study of gene expression because of its convenience, high sensitivity, and high success rate.

Ubigene' s luciferase stable cell lines were constructed by the lentivirus method. Not only stably and efficiently expressing the luciferase gene, but it also has the advantages of strong specificity, high imaging quality, and accurate quantification of luminous intensity. It enables the flexible applications in various aspects including promoter activity research, mammalian cell two-hybrid experiments, and imaging experiments in living animals.

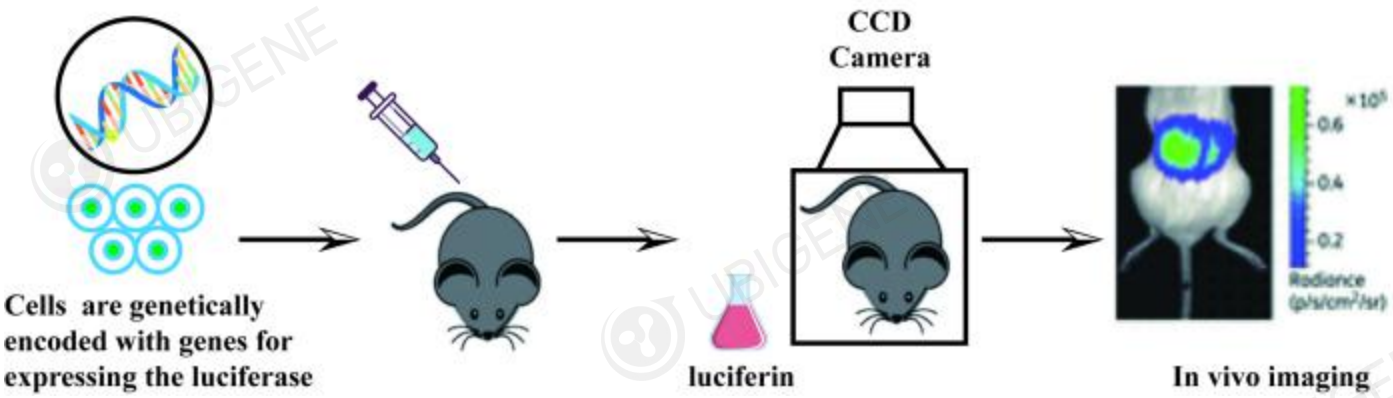


Figure 2. In vivo imaging process of luciferase stable tumor cell line

Cell Reception

Cryopreserved cells:

In the case of cryopreserved cells transported with dry ice, upon received, immediately transfer to liquid

nitrogen for storage or store briefly at -80°C freezer, or proceed directly to cell thawing. Upon cell thawing, please count the cell number and cell viability and take some photos of the cells under different magnification (e.g. at 100x and 40x) as the records.

Notice: Upon received, please ensure to takes photos of the package, including dry ice and the tubes, and contact us within 24 hrs if any abnormalities such as dry ice has ran out, the cap of the cryovial is dislodged, broken and the cell is contaminated.

Cell Thawing

1) Preparation: warm up the complete culture medium in 37°C water bath for 30 mins. Transfer the cryopreserved vial from liquid nitrogen to - 80°C freezer, and leave for several minutes to volatilize residual liquid nitrogen;
2) Inside the ultra-clean bench, pipet 6-7 mL of complete medium into a 15 mL centrifuge tube;
3) Take out the cryopreserved vial from - 80℃ freezer and leave in dry ice temporarily, shake slightly before thawing to remove residual dry ice and liquid nitrogen. Then hold the cap with forceps, quickly thaw cells in a 37°C water bath by gently swirling the vial (Note: keep the cap out of the water). In about 1 minute, it would completely thaw;
4) Inside the ultra-clean bench, sterilize the outer surface of the vial by wiping with an alcohol cotton pellet and leave it to dry. Transfer the thawed cells to the prepared centrifuge tube (step 2) by pipette, close the lid, and centrifuge at 1100 rpm for 4 mins at room temp to collect the cells;
5) Inside the ultra-clean bench, carefully remove and discard the supernatant. Resuspend cell pellet with 1mL of fresh complete medium and then transfer to a T25 flask (or 6 cm culture dish) containing 4 mL of complete medium, label the flask with cell name, date and passage no., incubate

the flask in a 37℃, 5%CO2 incubator.

Note: Please do not thaw the cells directly to a T75 flask or 10 cm culture dish.

Cell Passaging

The cells can be passaged when they have grown to the required density. The passaging of suspension cells can be divided into the following two cases:

a. Half medium replacement: when cells in good condition, with less cell debris and no yellowing of the culture medium, use half medium replacement method for passaging;

1) Inside the ultra-clean bench, gently pipet the cells in the culture flask evenly and take 20 ul of cells for cell counting;

2) According to the cell counting results, aspirate and discard part of the cell suspension, adjust the cell density to $2x10^5$~$4.0x10^5$cells/mL, and culture the cells in different sizes of culture flasks depending on the cell density.

b. Total medium replacement: cells in good condition, with a lot cell debris and the medium has turned yellow, use total medium replacement method for passaging;

1) Transfer culture medium to a 15 mL or 50 mL centrifuge tube in an ultra-clean bench and centrifuge at 1100 rpm for 4 minutes;

2) After centrifugation, remove and discard the supernatant and resuspend the cells with 1 mL of complete medium by pipette, and take 20 ul of cells for cell counting;

3) According to the cell counting results, aspirate and discard part of the cell suspension, adjust the cell density to $2x10^5$~$4.0x10^5$cells/mL, and culture the cells in different sizes of culture flasks depending on

the cell density, incubate the flask in a 37℃, 5%CO2 incubator.

Table 1. List of different volumes of medium for suspension cells in different culture plates/flasks

Size of culture plates/flasks	Volume of culture medium
6-well plate	3 mL
T25	5mL-8mL
T75	12mL-28mL
T175	30mL-50mL

Cell cryopreservation

1) Same as procedures of cell passaging, transfer cells from culture flasks to 50 mL centrifuge tubes in an ultra-clean bench and centrifuge at 1100 rpm for 4 minutes at room temp;

2) After centrifugation, remove and discard the supernatant, and resuspend the cells with 1-2 mL of 4℃ pre-cooled cryopreservation medium (use the one you usually use in lab, or any commercial cryopreservation solutions are fine), mix well by pipetting and take 20 μL for cell counting, then add cryopreservation medium to adjust to the required density (5×10^6-1×10^7cells/mL);

3) Aliquot the cell suspension to cryovials as 1 mL/tube, close the lid tightly, and the cryovials should be labeled with the cell name, source, cell passage number, and date of cryopreservation in advance;

4) Place the cryovials in 4℃ pre-cooled Freezing Container, then put the container in -80℃ freezers within 15 mins after cell cryopreservation;

5) Stay overnight, transfer the cryovials to liquid nitrogen for long-term storage.