



4T1-LUC

CSI424Mu12

Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

1st Edition (Revised in Apr, 2024)

[DESCRIPTION]

The tumor growth and metastatic spread of 4T1 cells in BALB/c mice very closely mimic human breast cancer. This tumor-derived cell line is an animal model for stage IV human breast cancer. 4T1-luc cells carry luciferase genes through lentiviral transfection, and can stably express firefly luciferase protein. The cell line was stable and could be cultured for 30 generations without adding antibiotics. It can be used as a positive control in the detection of firefly luciferase activity, and can also be used in live animal imaging experiments.

Synonyms: 4T1-luc; 4T1-LUC; 4T1-A-luc; 4T1-A-LUC; 4T1/luc

I. Introduction

Host Cell: 4T1

Plasmid vector: pLVX-puro-Luc2

Target Gene / Reporter(s): Firefly Luciferase

Resistance gene: Puromycin

Stability: 30 passages (in-house test, that not means the cell line will be instable beyond the passages we tested.)

II. Description of Host Cell Line

Organism: Mus musculus, mouse

Tissue: Breast; Mammary gland

Disease: Mimics human breast cancer; Stage IV

Morphology: Epithelial

Growth Properties: Adherent

[PROPERTIES]

Cell activity: >95% (Viability by Trypan Blue Exclusion).

Formulation: Frozen 1 mL or T25 flask.

Biosafety: Negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast and fungi.

Applications: For research use only. It is not approved for human or animal use, or for application in clinical diagnostic procedures.

Size: >5×10⁵cell/vial

[STORAGE]

Upon receiving, check all containers for leakage or breakage. directly and immediately transfer the cells



from dry ice to liquid nitrogen and keep the cells in liquid nitrogen until they are needed for experiments.

Form & Buffer: Supplied as solution form in frozen stock solution, containing 90%FBS+10%DMSO.

Storage conditions: liquid nitrogen

[USAGE]

Culture conditions:

Complete growth medium: RPMI-1640+10% FBS+1% P/S+2ug/ml Puromycin

Temperature: 37°C

Condition: 95% air, 5% carbon dioxide

Resistance screening:

1. The puromycin concentration of 4T1-luc cells was 2.0 ug/ml, and puromycin could not be added in the culture process. If the fluorescence intensity needs to be maintained, puromycin can be added for re-screening.
2. It is recommended to pass the cells for at least 3 generations after receiving them, and then screen them after freezing and retaining the species.
3. For initial cell screening, it is recommended to add complete medium with a final concentration of 1 ug/ml puromycin for maintenance culture of 2-3 days. The concentration of puromycin was gradually increased to a maximum drug concentration of 2 ug/ml, and the culture was maintained.

Cell recovery:

1. Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the cap out of the water. The thawing time is about 2 minutes.
2. Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by spraying with 75% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions.
3. Transfer the vial contents to a centrifuge tube containing 9.0mL complete culture medium. and spin at approximately 1000 rpm for 5 minutes.
4. Resuspend cell pellet with the recommended complete medium . and dispense into a T25 culture flask.
5. Incubate the culture at 37°C, 5% CO₂ in a suitable incubator.

Cell passage:

1. Cell passage when cell growth at 85-95%.
2. Remove and discard culture medium and wash with PBS 1-2 times.
3. Add 1.0 mL of Trypsin-EDTA solution to flask and observe cells under an inverted microscope until cell layer is dispersed (usually within 2 to 3 minutes. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal). Stop digestion by adding 2-3 ml of complete medium containing 10% serum. Make it a single cell suspension.
4. Add the fresh medium to resuspend the cells. Unless otherwise stated, the recommended ratio of primary cells is 1/3-1/4.



[Shipping]

Dry ice.

[IMPORTANTNOTE]

1. This product is intended for laboratory research use only. It is not intended for any animal or human therapeutic use, any human or animal consumption, or any diagnostic use.
2. To insure the highest level of viability, thaw the vial and initiate the culture as soon as possible upon receipt. If upon arrival, continued storage of the frozen culture is necessary, it should be stored in liquid nitrogen vapor phase and not at -70°C . Storage at -70°C will result in loss of viability.
3. After cell recovery, please take regular microscopic examination and photos to record the growth status of cells.
4. Read the instructions carefully, and keep and operate in strict accordance with the instructions. If you observe abnormalities or have questions about cell culture operations, please contact us in time.

[Figure]

After digestion of 4T1 and 4T1-luc cells, the cell precipitation was collected and 2ml of D-Luciferin working solution was added to the cell precipitation to detect the luminescence and carry out image analysis. The results showed that 4T1-luc cells could stably and highly express luciferase.

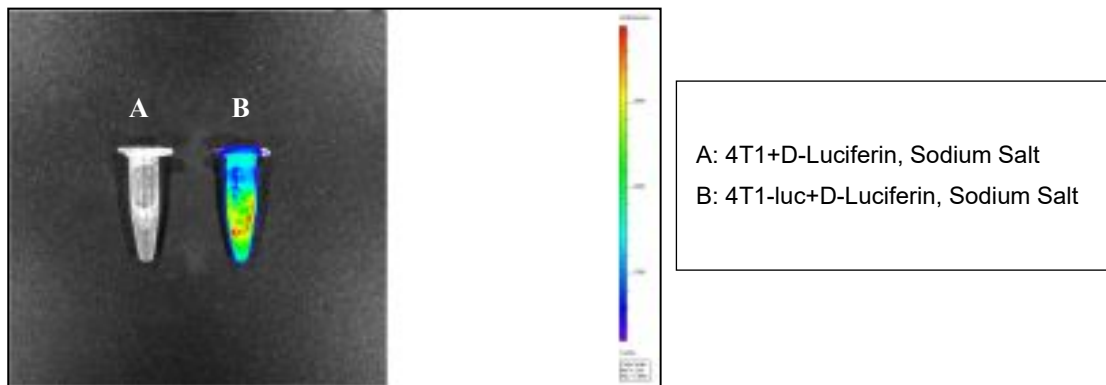


Figure 1 Bioluminescence in vitro of 4T1-luc