TS/A Mouse Mammary Adenocarcinoma Cell Line

Cancer Cell Line

Cat. # SCC177

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

Pack size: ≥1x10^6 viable cells/vial

Store in liquid nitrogen

Data Sheet

Background:

Metastasizing (stage IV) breast cancers have the lowest survival rate among all stages of breast cancer. Metastases may take on a range of morphologies in their new locations, complicating diagnosis and decisions on courses of treatment. Tumor cell lines that mimic the *in vivo* behavior of metastasizing cancers are thus critical tools in breast cancer research.

TS/A is a highly metastatic mouse mammary adenocarcinoma cell line exhibiting a marked degree of morphological heterogeneity in culture, with a range of differentiated cell types from epithelial-like to fibroblast-like.[1] TS/A cells express estrogen receptor and colony-stimulating factor[2] and are negative for the adhesion protein ICAM-1.[3] The TS/A cell line is a well-characterized and highly published model for tumor metastasis and heterogeneity and is a popular tool for studies of immunological gene therapy.[4,5]

Source

The TS/A cell line was isolated from a mammary adenocarcinoma that arose spontaneously in a BALB/c female mouse.[1]

Storage and Handling

TS/A Mouse Mammary Adenocarcinoma Cells should be stored in liquid nitrogen. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

References

1. *Clin Exp Metastasis* 1983; 1(4): 373-380.
2. *Br J Cancer* 1985; 52(2): 215-222.
3. *Eur J Immunol* 1995; 25(5): 1154-1162.
4. *Lab Invest* 1996; 74(1): 146-157.
5. *Cancer Res* 1994; 54: 6022-6026.

Quality Control Testing

- Each vial contains ≥ $1X10^6$ viable cells.
- Cells are tested negative for infectious diseases by a Mouse Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are verified to be of mouse origin and negative for inter-species contamination from rat, chinese hamster, Golden Syrian hamster, human and non-human primate (NHP) as assessed by a Contamination Clear panel by Charles River Animal Diagnostic Services
- Cells are negative for mycoplasma contamination.

Representative Data

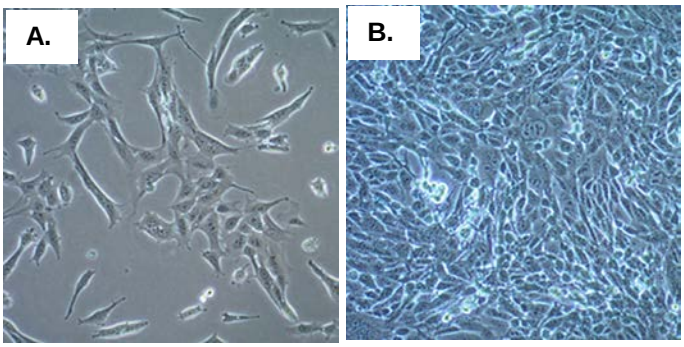

Figure 1. TS/A Mouse Mammary Adenocarcinoma Cell Line one (A) and two (B) days after thawing in a T75 flask. Cells proliferate rapidly.

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Protocols

Thawing Cells

1. Do not thaw the cells until the recommended medium is on hand. Cells can grow on normal tissue cultureware surfaces without any additional coating.

   TS/A Expansion Medium: Cells are thawed and expanded in DMEM Complete Medium (Sigma Cat. No. SLM-241-B) or in DMEM-High Glucose (Sigma Cat. No. D6546) supplemented with 1X L-Glutamine (Sigma No. G7513), 10% FBS (Cat. No. ES-009-B), and 1X Penicillin-Streptomycin Solution (Cat. No. TMS-AB2-C) (optional).
2. Remove the vial of frozen TS/A cells from liquid nitrogen and incubate in a 37°C water bath. Closely monitor until the cells are completely thawed. Maximum cell viability is dependent on the rapid and complete thawing of frozen cells.

   IMPORTANT: Do not vortex the cells.
3. As soon as the cells are completely thawed, disinfect the outside of the vial with 70% ethanol. Proceed immediately to the next step.
4. In a laminar flow hood, use a 1 or 2 mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add dropwise 9 mL of TS/A Expansion Medium (Step 1 above) to the 15 mL conical tube.

   IMPORTANT: Do not add the entire volume of media all at once to the cells. This may result in decreased cell viability due to osmotic shock.
6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.

   IMPORTANT: Do not vortex the cells.
7. Centrifuge the tube at 300 x g for 2-3 minutes to pellet the cells.
8. Decant as much of the supernatant as possible. Steps 5-8 are necessary to remove residual cryopreservative (DMSO).
9. Resuspend the cells in 15-20 mL of TS/A Expansion Medium.
10. Transfer the cell mixture to a T75 tissue culture flask.
11. Incubate the cells at 37°C in a humidified incubator with 5% CO_2.

Subculturing Cells

Note: *TS/A cells grow in tight clusters which detach easily from the culture dish when treated enzymatically with Accutase or Tryspin-EDTA. The clumps however, do not break up fully even with vigorous pipetting. If necessary, to obtain a single cell suspension, resuspend the cells after enzymatic dissociation, using a syringe with needle, passing the cells 2-3 times. For cell counting, the cell number within the clumps may be estimated.*

1. Carefully remove the medium from the T75 tissue culture flask containing the confluent layer of TS/A cells.
2. Rinse the T75 flask twice with 10 mL 1X PBS. Aspirate after each rinse.
3. Apply 10 mL of Accutase or trypsin-EDTA solution and incubate in a 37°C incubator for 3-5 minutes.
4. Inspect the flask and ensure the complete detachment of cells by gently tapping the side of the flask with the palm of your hand.
5. Add 12 mL of TS/A Expansion Medium to the plate.
6. Gently rotate the flask to mix the cell suspension. Transfer the dissociated cells to a 50 mL conical tube.
7. Centrifuge the tube at 300 x g for 3-5 minutes to pellet the cells.
8. Discard the supernatant, then loosen the cell pellet by tapping the tip of the tube with a finger.
9. Apply 2-5 mL of TS/A Expansion Medium to the conical tube and resuspend the cells thoroughly.

   IMPORTANT: Do not vortex the cells.
10. Count the number of cells using a hemocytometer.
11. Plate the cells to the desired density (typical split ratio is 1:6 – 1:10). Cells proliferate rapidly.

Cryopreservation of Cells

TS/A Mouse Mammary Adenocarcinoma Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene slow freeze Mr. Frosty container.

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