SMA-560 Mouse Orthotopic Glioma Cell Line

Cancer Cell Line

Cat. # SCC179

Pack size: ≥1x10^6 viable cells/vial

Store in liquid nitrogen

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

Data Sheet

Background

Gliomas are a rare and aggressive cancer with an extremely low survival rate and high resistance to treatment.[1] Glioma models that recapitulate the multiple features of the disease are important for understanding of mechanisms of glioma malignancy and development of effective therapies, especially those that address tumor-induced immunosuppression and resistance.

The SMA-560 cell line is a well-established glioma model derived from a spontaneous murine astrocytoma.[2,3] SMA560 cells are highly reflective of differentiated anaplastic astrocytoma, having high expression of the differentiated astrocyte marker glial fibrillary acid protein (GFAP) and the astrocyte marker glutamine synthetase and low expression of S-100 proteins.[4,5] The SMA560 cell line maintains robust tumorigenic behavior after serial passaging.[2] Uniquely among established murine glioma models, SMA560 cells express the immunosuppressive protein transforming growth factor β (TGF-β)[6], making this cell line of great value for investigation of targeted cancer immunotherapies.

Source

SMA-560 cell line was derived from a spontaneous astrocytoma passaged in syngenic VM/Dk mice.[2]

Storage & Handling

SMA-560 Mouse Orthotopic Glioma Cell Line 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. *N Engl J Med* 2005; 352(10): 987-996.
2. *Acta Neuropathol* 1980; 51(1): 53-64.
3. *Neurosci Lett* 1982; 34(3): 315-320.
4. *J Neurol Sci* 1983; 62(1-3): 115-139.
5. *J Neurol Neurosurg Psychiatry* 1986; 49(12): 1361-1366.
6. *Neurosurgery* 1997; 41(6): 1365-1372.

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

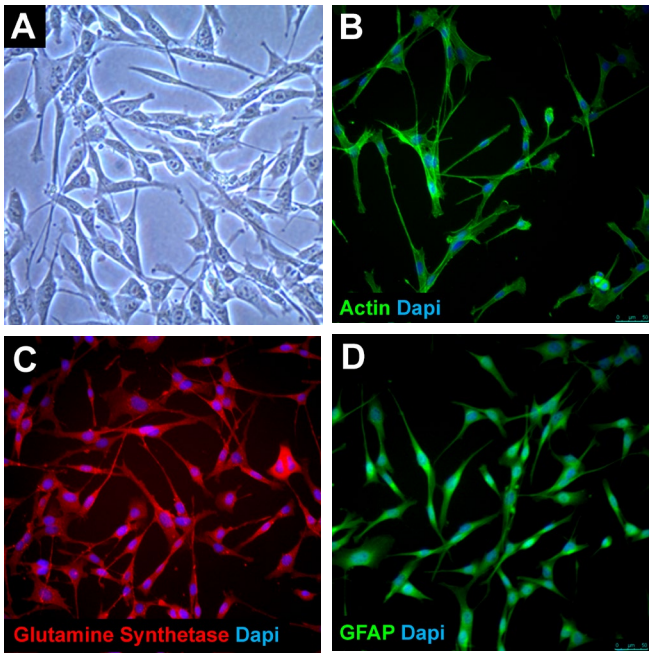

Figure 1. SMA-560 Mouse Orthotopic Glioma Cell Line one (A) day after thawing in a T75 flask. Cells express actin (B), glutamine synthetase (C) and GFAP (D).

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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.

   SMA-560 Expansion Medium: Cells are thawed and expanded in MEM (Richter's modification) (ThermoFisher Cat. No. 10373-017) supplemented with 10% FBS (Cat. No. ES-009-B).
2. Remove the vial of frozen SMA-560 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 SMA-560 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 mL of SMA-560 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

1. Do not allow the cells to grow to confluency. SMA-560 cells should be passaged at ~80-85% confluence at a split ratio of 1:6.
2. Carefully remove the medium from the T75 tissue culture flask containing the LOX-IMVI cells.
3. Rinse the flask with 10 mL 1X PBS. Aspirate after the rinse.
3. Apply 5-7 mL of Accutase 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 5-7 mL of SMA-560 Expansion Medium to the plate.
6. Gently rotate the flask to mix the cell suspension. Transfer the dissociated cells to a 15 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 SMA-560 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.

Cryopreservation of Cells

SMA-560 Mouse Orthotopic Glioma Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene slow freeze Mr. Frosty container.

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