Data Sheet

SCC-61 Human Squamous Cell Carcinoma Cell Line

Cancer Cell Line

SCC280

Pack Size ≥1x10^6 cells/vial

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for Human or Animal Consumption.

Background

Squamous cell carcinoma of the head and neck (HNSCC) is the 9th-most common cancer worldwide and is characterized by a high rate of recurrence after therapy, with a median 5-year survival range of 40-50%.[1] HNSCC tumors show a wide range of heterogeneity in response to radiation therapy. Cellular HNSCC models that demonstrate a range of radiation sensitivity are thus invaluable for elucidating the factors underlying radiation responses of cancer cells.

The SCC-61 human squamous cell carcinoma cell line, derived from an aggressive tongue squamous cell carcinoma,[2] is an established model for HNSCC. SCC-61 cells are relatively sensitive to radiation compared to other HNSCC cell lines and has a relatively stable genome.[3] In culture SCC-61 cells grow robustly and are strongly adherent. SCC-61 cells have been characterized by positive expression of the SCC marker p63 (p40).[4] SCC-61 cells have demonstrated utility in studies parsing mechanisms of radio-resistance in SCC tumor cells, as demonstrated by transformation of this cell line with factors conferring radio-resistance.[5]

Source

SCC-61 cell line was derived from a tongue squamous cell carcinoma of a male patient.[2]

D3S1358: 15	D16S539: 9, 11
TH01: 7, 9	CSF1PO: 10, 12
D21S11: 28, 30	Penta D: 10, 12
D18S51: 12, 14	vWA: 16, 17
Penta E: 7, 11	D8S1179: 12, 14
D5S818: 12, 13	TPOX: 8
D13S317: 10, 12	FGA: 22, 25
D7S820: 8, 12	Amelogenin: X, Y

Cancer cell lines are inherently genetically unstable. Genetic instability may arise in the form of loss of heterozygosity of alleles at one or more genetic sites with increased passages.

Quality Control Testing

- Each vial contains ≥1x10^6 viable cells.
- Cells are tested negative for infectious diseases by a Human Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are verified to be of human origin and negative for inter-species contamination from mouse, rat, Chinese hamster, Golden Syrian hamster, and non-human primate (NHP) as assessed by a Contamination Clear panel by Charles River Animal Diagnostic Services.
- Cells are negative for mycoplasma contamination.

Storage and Handling

SCC-61 Human Squamous Cell Carcinoma 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.

Representative Data

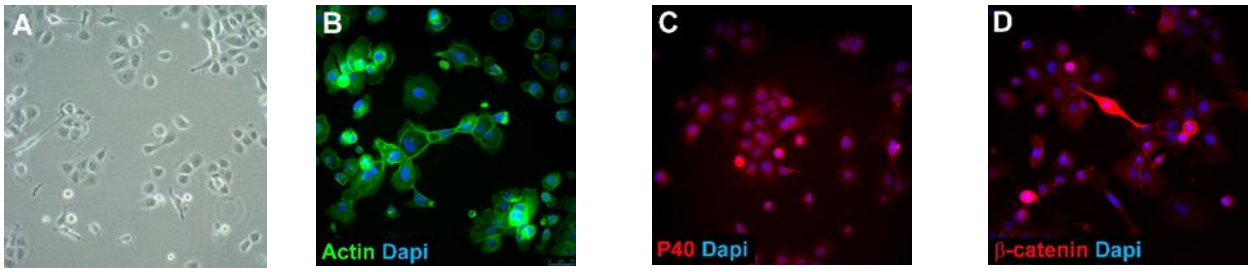

Figure 1. Bright-field image of cells one day after thaw (**A**). SCC-61 cells express actin (**B**, Cat. No. P5282) P40 (**C**, MABS519-AF488) and β-catenin (**D**, ABE208).

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.

   SCC-61 Expansion Medium: Cells are thawed and expanded in DMEM/F12 (Cat. No. D8062), 20% FBS (Cat. No. ES-009-B), and 0.4 µg/mL hydrocortisone (Cat. No. H0888).
2. Remove the vial of frozen SCC-61 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 SCC-61 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 SCC-61 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

SCC-61 cells are highly adherent. To detach the cells, we recommend using a higher strength trypsin (Cat. No. T2605) and a longer incubation time.

1. Do not allow the cells to grow to confluency. SCC-61 should be passaged at ~80-85% confluence.
2. Carefully remove the medium from the T75 tissue culture flask containing the 80% confluent layer of SCC-61 cells.
3. Rinse the flask with 10 mL 1X PBS. Aspirate after the rinse.
4. Apply 5-7 mL of Trypsin-EDTA (Cat. No. T2605) and incubate in a 37 °C incubator for 8-10 minutes.
5. Inspect the flask and ensure the complete detachment of cells by gently tapping the side of the flask with the palm of your hand.
6. Add 5-7 mL of SCC-61 Expansion Medium to the plate.
7. Gently rotate the flask to mix the cell suspension. Transfer the dissociated cells to a 15 mL conical tube.
8. Centrifuge the tube at 300 *x g* for 3-5 minutes to pellet the cells.
9. Discard the supernatant, then loosen the cell pellet by tapping the tip of the tube with a finger.
10. Apply 2-5 mL of SCC-61 Expansion Medium to the conical tube and resuspend the cells thoroughly.

    IMPORTANT: Do not vortex the cells.
11. Count the number of cells using a hemocytometer.
12. Plate the cells to the desired density. Typical split ratio is 1:6.

Cryopreservation of Cells

SCC-61 Head & Neck Squamous Cell Carcinoma Cell Line may be frozen in SCC-61 Expansion Medium and 10% DMSO using a Nalgene® slow freeze Mr. Frosty® container.

References

1. J Immunother Cancer. 2019; 7(1): 184.
2. Br J Cancer. 1984; 49(5): 595-601.
3. Int J Radiat Oncol Biol Phys. 1991; 20(4): 733-8.
4. Diagn Cytopathol 2009; 37(3): 178-83.
5. Proc Natl Acad Sci USA. 2004; 101(6): 1714-9.

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