

Data Sheet

HCC95 Human Lung Squamous Cell Carcinoma Line

Cancer Cell Line

SCC483**Pack Size: $\geq 1 \times 10^6$ viable cells/vial****Store in liquid nitrogen****FOR RESEARCH USE ONLY****Not for use in diagnostic procedures. Not for Human or Animal Consumption.**

Background

Lung cancer is a significant cause of death worldwide. Among all lung cancer cases, 85% are categorized as non-small cell lung cancer (NSCLC) which is a heterogeneous group of diseases with poor prognosis having a predicted 5-year survival rate.^{1,2} Among all NSCLC cases, 30-40% are categorized as lung squamous carcinoma (LUSC) which often affects the main airways and bronchi and whose etiology is attributed to smoking.^{3,4}

Among the NSCLC cell lines, HCC95 has been shown to replicate LUSC disease phenotype. Early research showed that the HCC95 line is highly similar to the original tumor genetically and histochemically—with poor differentiation and formation of keratinization.⁵ Recently, transcriptomic characterizations show that HCC95 shows high similarity to the typical LUSC transcriptome.⁶ Collectively, these demonstrate that HCC95 is a valuable cell line in modeling LUSC with high fidelity *in vitro*. HCC95 is often used as an *in vitro* model for NSCLC or LUSC. A 2010 study has exemplified the use of HCC95 in studying NSCLC sensitivity to cisplatin treatment.⁷

Source

The HCC95 cell line was derived from a 65-year-old male with NSCLC.⁵

Short Tandem Repeat

D3S1358:	17	D8S1179:	14, 16	D13S317:	11, 12	CSF1PO:	10, 12
D7S820:	10	D21S11:	29, 30	D16S539:	9	AMEL:	X
vWA:	14, 17	D18S51:	16, 20	TH01:	8, 9	Penta D:	9
FGA:	22	D5S818:	11, 12	TPOX:	8, 11	Penta E:	12, 17

Cancer cell lines are inherently genetically unstable. 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 $\geq 1 \times 10^6$ 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

HCC95 cells should be stored in liquid nitrogen. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting functionality.

Presentation

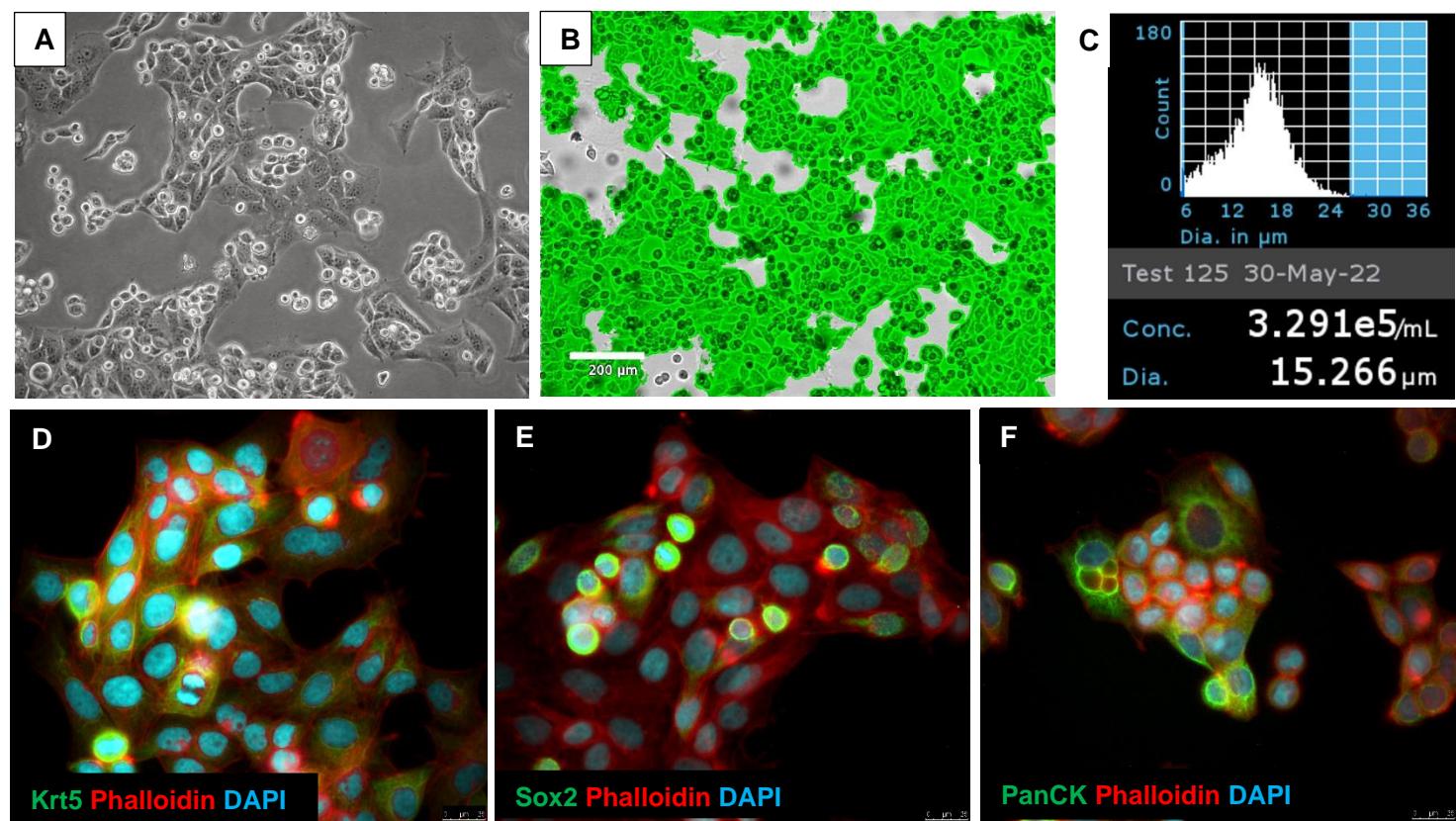


Figure 1. (A) Bright-field image of HCC95 cells three days after thaw in a T75 flask. (B) Cell confluence (79%) was assessed throughout the culture using MiliCell® Digital Cell Imager (MDCI 10000). (C) Cell counting was performed using Scepter™ 3.0 handheld automated cell counter (PHCC360KIT) using 60 μm sensor tips. (D) HCC95 cells express the squamous carcinoma marker, keratin 5 (Krt5), (E) cancer stem cell marker, Sox2, and (F) general epithelial marker, pan-cytokeratin (panCK).

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.

Cells are thawed and expanded in HCC95 Expansion Medium comprised of RPMI-1640 Medium (R0883) with 10% FBS (ES-009-B), 2 mM L-Glutamine (TMS-002-C), 1 mM Sodium pyruvate (S8636), and 1X Penicillin/Streptomycin (TMS-AB2-C, optional).

2. Remove the vial of frozen HCC95 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.

Note: 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 HCC95 Expansion Medium (Step 1 above) to the 15 mL conical tube.

Note: 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.

Note: Do not vortex the cells.

7. Centrifuge the tube at 1100 rpm for 5 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 20 mL of HCC95 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% CO₂.

Subculturing Cells

1. HCC95 cells should be passaged at ~80-85% confluency. Do not allow the cells to grow over 85% confluency.
2. Carefully remove the medium from the T75 tissue culture flask containing the 80% confluent layer of HCC95 cells. Rinse the flask with 10 mL 1X PBS. Aspirate after the rinse.
3. Apply 5 mL of Accutase® or Trypsin/EDTA solution and incubate in a 37 °C incubator for 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 8 mL of HCC95 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.
9. Add 2-5 mL of HCC95 Expansion Medium to the conical tube and resuspend the cells thoroughly.

Note: Do not vortex the cells.

10. Count the number of cells using a hemocytometer or a Scepter 3.0 handheld automated cell counter using 60 µm sensor tips.
11. Plate the cells to the desired density. Typical split ratio is 1:4 to 1:8. The medium should be replaced every other day.

Cryopreservation of Cells

HCC95 cells may be frozen in HCC95 Expansion Medium and 10% DMSO using a Nalgene® slow freeze Mr. Frosty® container.

References

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