Product sheet

SCC-9 Cells | 305390

General information

Description	SCC-9 is a human oral squamous cell carcinoma (OSCC) cell line commonly used in research focused on head and neck cancers, particularly in studying tumor progression, apoptosis, and treatment efficacy. OSCC is a prevalent form of head and neck cancer with a low 5-year survival rate, making cell lines like SCC-9 essential for understanding cancer biology and exploring potential therapeutic strategies. SCC-9 cells have been utilized in studies to assess the effects of various chemotherapeutic agents and natural compounds on oral cancer. For example, quercetin, a dietary flavonoid, has been shown to induce both necrosis and apoptosis in SCC-9 cells in a time- and dose-dependent manner. Quercetin's antiproliferative effects were linked to the inhibition of thymidylate synthase, a key enzyme in DNA synthesis, leading to S-phase arrest in the cell cycle. The induction of necrosis was observed early, while prolonged exposure led to apoptosis through caspase-3 activation. Similarly, curcumin has been demonstrated to inhibit SCC-9 cell proliferation by regulating miR-9 expression, a microRNA associated with tumor suppression. Curcumin suppresses the Wnt/β-catenin signaling pathway, thereby reducing the levels of key oncogenic factors like cyclin D1. These findings highlight the relevance of SCC-9 cells in testing novel anticancer agents and unraveling the molecular mechanisms of OSCC development, particularly in targeting pathways like Wnt/β-catenin and assessing the role of apoptosis and cell cycle regulation.
Organism	Human
Tissue	Tongue
Disease	Squamous cell carcinoma
Synonyms	SCC 9, SCC9, SFCI-SCC-09

Characteristics

Age	25 years
Gender	Male
Ethnicity	Caucasian
Growth properties	Adherent

Regulatory Data

Citation	SCC-9 (Cytion catalog number 305390)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1685

Biomolecular Data

Protein expression	Epidermal keratins, involucrin (low)

Handling

Culture Medium	DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Thawing and Culturing Cells	1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required. 3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains. 4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening. 5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently. 6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. 7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
Shipping Conditions	Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.
Storage Conditions	For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality Control & Molecular Analysis

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Sterility	Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods. To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.