**Product sheet**

# SCC-9 Cells | 305390

## General information

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| **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.<br><br>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.<br><br>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

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| **Age** | 25 years |
| **Gender** | Male |
| **Ethnicity** | Caucasian |
| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | SCC-9 (Cytion catalog number 305390) |

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| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_1685 |

## Biomolecular Data

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| **Protein expression** | Epidermal keratins, involucrin (low) |

## Handling

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| **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. |

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| **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.<br>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.<br>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.<br>4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.<br>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.<br>6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.<br>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.<br>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.<br><br>To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections. |