**Product sheet**

# CAL 27 Cells | 305029

## General information

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| **Description** | Cal 27 cells is a human squamous cell carcinoma cell line derived from a primary tumor located in the tongue of a 56-year-old male in 1982. Cal 27 cells are epithelial in morphology and are widely used in scientific research to study oral carcinogenesis, the biology of squamous cell and oropharyngeal carcinoma, and to evaluate potential therapeutic agents for head and neck cancers.<br><br>The Cal27 cell line has been employed in a variety of research applications, including studies on cell proliferation, apoptosis, particularly in the context of anticancer drug sensitivity and the search for novel anticancer agents, migration, and invasion. They have also been used to investigate the effects of various chemotherapeutic agents such as Cisplatin, radiation therapy, and targeted therapies.<br><br>The Cal-27 adenosquamous carcinoma cell line is further used as xenografts, which are instrumental for studying tumor angiogenesis, lymph node metastasis, as well as metastasis and chemoresistance mechanisms. The interaction of Cal27 cells with integrins α6β4 and αvβ3 is of interest, as these molecules play a crucial role in cell adhesion. Studies have explored the effects of targeting these pathways with drugs like vismodegib and itraconazole, substances known to modulate the hedgehog pathway.<br><br>Overall, the Cal 27 cell line serves as a robust model for investigating the complex biology of oral squamous cell carcinomas and for testing new therapeutic interventions, thereby contributing to advancements in the management and treatment of oral cancers. |
| **Organism** | Human |
| **Tissue** | Tongue |
| **Disease** | Tongue squamous cell carcinoma |
| **Synonyms** | Cal-27, CAL 27, Cal 27, CAL27, Cal27, Centre Antoine Lacassagne-27 |

## Characteristics

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| **Age** | 56 years |
| **Gender** | Male |
| **Morphology** | Epithelial |
| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | CAL 27 (Cytion catalog number 305029) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_1107 |

## Biomolecular Data

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| **Tumorigenic** | Yes |

## Handling

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| **Culture Medium** | DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a) |
| **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. |
| **Fluid renewal** | 2 to 3 times per week |
| **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. |