Product sheet

CAL 27 Cells | 305029

General information

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. 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. 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. 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

Age	56 years
Gender	Male
Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

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Citation	CAL 27 (Cytion catalog number 305029)
Biosafety level	1

Expression / Mutation

Tumorigenic	Yes

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	1:2 to 1:4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.

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STR profile

Amelogenin: x,x
CSF1PO: 10
D13S317: 10
D16S539: 11
D5S818: 11
D7S820: 10
TH01: 6
TPOX: 8
vWA: 14
D3S1358: 16
D21S11: 28
D18S51: 13
Penta E: 7
Penta D: 9
D8S1179: 13
FGA: 25