C666-1

305512

GENERAL INFORMATION

Description

The C666-1 cell line is derived from nasopharyngeal carcinoma (NPC) and is unique for its consistent retention of Epstein-Barr virus (EBV) within its cells. This feature makes C666-1 a critical model for studying EBV-associated NPC, as EBV infection is prevalent in NPC cases, particularly among patients in Southeast Asia. The cell line was originally established from an undifferentiated NPC tumor xenograft derived from a patient of southern Chinese origin. C666-1 cells exhibit EBV latency II patterns, including expression of viral proteins such as EBNA1, LMP1, and LMP2, which are implicated in NPC pathogenesis and tumor progression. These cells are tumorigenic when implanted in immunocompromised mice and grow as adherent cultures lacking contact inhibition, indicative of their aggressive cancer phenotype.
Research using C666-1 has illuminated the role of EBV in NPC, especially the functions of viral proteins that drive oncogenesis. Studies have shown that targeting EBV latency proteins, such as LMP1, with RNA-cleaving DNAzymes or inhibitors, can suppress tumor growth, reduce proliferation, and induce apoptosis in C666-1 cells. Furthermore, compounds like nobiletin and miRNA inhibitors targeting cellular pathways (e.g., PARP-2/SIRT1/AMPK and STAT3 signaling) demonstrate potential therapeutic efficacy by inhibiting cell proliferation and promoting apoptosis. These findings underscore the utility of C666-1 as a research model for developing therapies that specifically target EBV-related molecular mechanisms in NPC.
C666-1 cells serve as a valuable in vitro and in vivo system for understanding EBV's influence on tumor biology and for evaluating antiviral and anticancer therapies aimed at EBV-driven pathways. The cell line's stable expression of EBV-encoded RNA (EBER), epithelial markers like cytokeratin, and genetic alterations characteristic of NPC further enhance its relevance for translational research in NPC therapeutics.

Tissue	Nasopharynx
Disease	Nasopharyngeal carcinoma

Synonyms

- c666-1
- C6661

CLASSIFICATION

Organism	Human
Sex	Male
Biosafety level	2

IDENTIFIERS

Citation

C666-1 (Cytion catalog number 305512)

NCBI TaxID	9606
Cellosaurus	CVCL_7949

EXPRESSION AND SUSCEPTIBILITY

Viruses

Transformant: EBV

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	Unspecified
Ethnicity	Chinese

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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